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A NEW DIET FOR PEPTIC ULCER*

WARREN COLEMAN, M.D.

NEW YORK

Whatever may be the causes that initiate the pathologic processes of peptic ulcer, the ultimate cause is the digestion of circumscribed devitalized areas of the gastric or duodenal wall.

After its development, the chief sources of injury to the ulcer are (1) the chemical action of the digestive juices and (2) the mechanical irritation from peristalsis and unselected foods.

As with ulcers elsewhere in the body, protection from injury is the first therapeutic consideration; the second is maintenance of the patient's nutrition. Since the location of the peptic ulcer imposes limitations on the procedures that may be employed for its cure, the problem confronting the physician is essentially dietetic in character.[1]

The ideal procedure would be to put the stomach at absolute rest. But rectal and parenteral feeding have not yet been brought to the required state of perfection. Food must be given by mouth.[2]

Probably in every case of peptic ulcer, at least during some part of its course, the acidity of the gastric juice is abnormally high, and its secretion unduly prolonged. It is also probably true that the most annoying symptoms of peptic ulcer (in the absence of deformity of the stomach or duodenum) are due to actual or relative hyperacidity, or were initiated by it. An interesting analogy is to be found in one of Pawlow's[3] dogs:

> A round ulcer formed in the gastric culdesac, which steadily increased in size, gave rise from time to time to violent bleeding, and finally, after perforation of the stomach wall, produced a secondary peritonitis. During the development of the ulcer, a continuous and increasing hypersecretion was observed, the flow finally exceeding the normal by three or four times. . . . The secretion of the first hour departed in no way from the normal, but in the second it remained at its previous height, instead of dropping to about one half. In the succeeding hours also the secretion was considerably greater than normal.

THE VICIOUS SECRETORY CIRCLE

Pawlow explains this departure from normal in the secretory processes of the stomach as due to increased excitability of the centripetal nerves or their nerve endings in the mucous membrane, resulting from the presence of the ulcer. This observation of Pawlow's, together with the symptomatology of typical cases of peptic ulcer, suggests the establishment of a vicious secretory circle when patients follow their usual dietetic habits. The action of "stomachics" in ulcer cases lends support to this view. And, conversely, when the vicious circle is broken, the symptoms of peptic ulcer disappear, though the frequent return of symptoms after varying intervals, indicates that the ulcer has not healed. As is well known, such cycles repeat themselves from time to time in the course of peptic ulcer.

The problem therefore consists in the arrangement of a diet that will give the stomach the maximum amount of secretory and motor rest while at the same time it supplies the patient with sufficient food to cover his daily energy expenditures.

Numerous diets have been arranged for peptic ulcer, and several of the most typical of them may be examined critically to ascertain the extent to which they conform to the foregoing requirements. It may be mentioned in passing that Einhorn[4] seeks the solution of the problem in his method of duodenal feeding, and reports good results from its use.

THE LENHARTZ DIET[5]

On the first day, only 200 c.c. of milk and two eggs are allowed. These are increased gradually, until, at the end of the first week, the patient is receiving 900 c.c. of milk and eight eggs. Sugar (20 gm.) is added to the diet on the third day, and increased to a total of 50 gm. on the ninth day. Scraped meat (35 gm.) is added on the sixth day, and increased to 70 gm. on the day following. Rice is allowed on the seventh day, zwieback on the eighth day and butter on the tenth day.

Beginning with 280 calories a day, the energy value of the diet rises to 2,138 calories by the ninth day and to 3,073 calories by the fourteenth day. The proportions of the several foodstuffs on the ninth day are, approximately, protein, 130 gm.; fat, 75 gm., and carbohydrate, 200 gm.

It is obvious that, after the first week, the Lenhartz diet does not differ greatly from the average normal diet except in the selection of foods and the relative excess of protein.

THE SIPPY DIET[6]

Sippy recommends the administration of 3 ounces (90 c.c.) of equal parts of milk and cream every hour from 7 o'clock in the morning to 7 o'clock at night. Eggs, crackers, bread and butter and cereals (rice, oatmeal and farina) gradually are added to the diet, and,

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1. The use of drugs and the indications for surgical intervention do not come within the scope of the present discussion.

2. Nutrient enemas cannot be discussed at length at this time, but it may be pointed out that native and partially digested proteins are not absorbed from the large intestine; however, in a carefully controlled experiment on a volunteer who had gone without food for several days, I found that amino-acids are readily absorbed. It is doubtful whether fat is aborbed from the large intestine: glucose is readily absorbed.

3. Pawlow, I. P.: The Work of the Digestive Glands, Philadelphia, J. B. Lippincott Company, 1910.

4. Einhorn: M. Rec. **78**: 92, 1910.

5. Lenhartz: Deutsch. med. Wchnschr. **30**: 412, 1904.

6. Sippy, B. W.: Diseases of the Stomach, in Musser and Kelly's Practical Treatment, Philadelphia, W. B. Saunders Company **3**: 336, 1912.

still later, custards, creamed soups, vegetable purées, jellies and marmalades.

By the end of the first week, the patient is receiving approximately 65 gm. of protein, 135 gm. of fat and 100 gm. of carbohydrate daily, with an energy value of some 1,800 calories.

Every hour, midway between the feedings, and every half hour for four or five doses after the last feeding, the patient is given a powder containing 10 grains (0.6 gm.) each of heavy magnesium oxid and sodium bicarbonate, alternating with a powder containing 10 grains (0.65 gm.) of calcium carbonate and 30 grains (2 gm.) of sodium bicarbonate.

The striking features of the Sippy diet are the frequency of the feedings, the preponderance of fat and the use of alkalis to neutralize the hydrochloric acid. While under this diet the nutrition of the patient is maintained and strongly acid chyme never reaches the ulcer, the stomach is kept in a state of constant activity for twelve of every twenty-four hours.

SMITHIES DIET[7]

Although the Smithies diet was not published until five years after I had begun the use of the diet here advocated, it seems advisable to consider it in this connection.

For from three to seven days, depending on the persistence of the gastric distress, Smithies gives by mouth one-half ounce (15 c.c.) of warm water every hour while the patient is awake and, occasionally during the day, orange juice and the juice of grapefruit. During this period, enemas consisting of 50 per cent. alcohol, 1 ounce (30 c.c.), glucose 1 ounce (30 gm.), and physiologic sodium chlorid solution, 240 c.c., are given every four hours by the drip method. For the first day or so, 10 drops of tincture of opium is given with each enema. The number of enemas is reduced when feeding by mouth is begun; they are discontinued on the fifth day thereafter. On the third to the seventh day, gruels made of rice, wheat, oatmeal, sago, cornmeal, etc., are given by mouth in quantities of from 4 to 6 ounces (120 to 180 c.c.). From the fourteenth to the twenty-first day, barley water, zwiebach, butter, milk and boiled milk, puddings, custards, purées, Salisbury steak and eggs are gradually added to the menu. One ounce (30 c.c.) of warm water, or orange juice or grapefruit juice is allowed whenever desired throughout the treatment. This diet is continued for from six to seven weeks.

The quantities of the various foods are not stated with sufficient definiteness to permit calculation of the energy value of the diet on particular days, yet, from the selection and preparation of the foods, it is improbable that the patient receives as much energy as from the Lenhartz and Sippy diets until in the third week of treatment. For the same reason, the proportions of the individual foodstuffs cannot be computed.

COMMENTS ON THESE DIETS

Each of these authors sought, in arranging his diet, to give the greatest possible protection to the ulcer, while maintaining the patient's nutrition. In each instance, the foods were carefully selected, and foods that are notoriously difficult to digest, or with potentially harmful residues, were excluded from the menu. And the quantity of food permitted at any one time was limited.

The Smithies diet allows the stomach complete preliminary rest except for the occasional administration of raw fruit-juices, which are prohibited by the majority of practitioners because of their acidity. The diet is built up on the premise that carbohydrates require no digestive effort on the part of the stomach, and pass quickly into the duodenum. But the principal foods of the diet are not simple carbohydrates; they contain protein in not inconsiderable percentages—rice contains 8 per cent. protein, wheat 10 per cent. and oatmeal 16 per cent. They are, therefore, mixtures of foodstuffs, and their influence on the digestive processes must be compared with that of bread. From the investigations of Pawlow, we know that bread requires for its digestion a longer time than meat, that the flow of gastric juice is correspondingly prolonged, and that the total quantity is greater. The acidity of "bread-juice," however, is lower than that of meat, but its digestive power (ferment content) is three times as great. Therefore, from the standpoint of the amount of work demanded of the stomach, gruels made of rice, wheat and oatmeal cannot be considered as easy of digestion. This is due primarily to the presence of the protein, and to the fact that vegetable protein is very difficult to digest. Further objection to the Smithies diet lies in the frequency of the feedings; the stomach is permitted neither secretory nor motor rest for twelve hours of each day after feeding by mouth is started.

The Lenhartz diet gives the stomach partial rest for somewhat more than a week. Thereafter, the diet is comparable to the average normal diet, except in the variety of foods. The excess of protein—130 gm. a day—is objectionable, at least theoretically, because of its tendency to establish a vicious secretory circle. Though protein actively combines with hydrochloric acid, a large quantity of strongly acid gastric juice is required for its digestion and, by analogy with Pawlow's dog, its secretion is prolonged beyond the immediate needs of the meal.

The effects of the Sippy diet on the secretory activity of the stomach cannot be stated, because data are lacking. The secretion as a whole is probably greatly diminished by the excess of fat (135 gm. a day) and by the sodium bicarbonate. If any hydrochloric acid is secreted, it is neutralized, and it seems probable that no digestion whatever occurs in the stomach. In this respect, the Sippy diet is comparable to duodenal feeding. The ulcer is completely protected from chemical injury, but the hourly administration of food keeps the stomach in constant motor activity.

In spite of theoretical objections, good results have been reported from the use of these diets. And yet the question presents itself, whether it is not possible to arrange a dietary which will more nearly fulfil the indications for treatment. The digestive responses to certain foods possess therapeutic possibilities in cases of ulcer, but in none of the foregoing diets has this principle found expression.

As has been stated, the sources of injury to the peptic ulcer may be grouped as chemical and mechanical. Both kinds of injuries are incident to the digestive activities of the stomach. The problem, therefore, becomes one of selecting foods which do not excite the gastric secretion and which least stimulate the motor activity of the organ. Pawlow has demonstrated that such foods exist.

A NEW DIET

Selection of Foods.—Fats: Fats not only are not digested in the stomach, but, when taken with other foodstuffs, diminish or delay the gastric secretion; they are capable even of inhibiting the powerful psychic

7. Smithies, F.: Am. J. M. Sc. 153: 547 (April) 1917.

impulse. Fats leave the stomach slowly, and thus form a protective coating over the ulcer. The food habits of the Eskimos and, Pawlow states, of certain Russians, indicate that the stomach tolerates large amounts of fat, and Newburgh and Marsh [8] have proved that there is no danger of acidosis from an excess of fat, even when carbohydrate is reduced to a minimum. It need scarcely be added that the fat should be pure and that it should not be given with other foodstuffs.

The most suitable fats for the ulcer diet are olive oil and butter fat. The butter should be fresh and unsalted; if there is any probability of its containing more than a trace of butyric acid, the butter should be washed several times in water, since butyric acid is a powerful excitant of gastric secretion. Yolk of egg and cream are less desirable forms of fat because both contain protein, but experience has shown that they may be used late in the treatment without causing a return of symptoms.

Fat must be depended on to furnish the greater portion of the energy of the diet.

Protein: White of egg, when given alone, or with a small quantity of water or lightly boiled, does not excite the gastric secretion. It is digested in the stomach only when gastric digestion has been initiated by some other food or by the psychic impulse, and passes quickly into the duodenum. White of egg may therefore be selected to furnish the protein of the ulcer diet. The amount of nitrogen need only slightly exceed the nitrogen minimum, that is, from 3 to 5 gm. a day. This amount is provided by the whites of from six to eight eggs.

Carbohydrate: As has already been pointed out, the commoner, so-called carbohydrate foods, the cereals, are mixtures of starch and protein. Their digestion is difficult and prolonged. And pure carbohydrates, such as the sugars, are apt to undergo fermentation in the stomach. For these reasons, it is desirable to give no carbohydrate by mouth, but to give glucose by rectum. Glucose is readily absorbed from the large intestine, but it has been found expedient to give not more than from 90 to 100 gm. a day.

Salt: Sodium chlorid is added to the glucose enemas to prevent loss of chlorin from the body.

Water: The greater portion of the water required may be given by rectum. If thirst is not controlled by the enemas, moderate quantities of water may be allowed by mouth whenever desired. Water excites the gastric secretion only when given in large amounts at a time.

Based on the foregoing considerations, the diet that I wish to recommend for peptic ulcer consists only of olive oil or butter fat, white of egg, glucose, salt and water. The white of egg and fats and a moderate quantity of water are given by mouth; the glucose and salt are given in solution by rectum. In order to secure complete rest for the stomach, only water is permitted by mouth for several days. In the earlier part of the treatment, both in the preliminary period and after feeding by mouth is begun, the patient does not receive the amount of food he needs; but when the totals of the various foods have been reached, the nutritive requirements of the body are completely covered. Thus:

Five ounces (150 c.c.) of olive oil (or about 6 ounces [180 gm.] of butter) furnish approximately 1,400 calories.

The whites of eight eggs contain 33 gm. of protein (5 gm. of nitrogen), and furnish 135 calories.

Four ounces (120 gm.) of glucose furnish 480 calories.

Eight grams of salt will prevent loss of chlorin from the body.

On such a plan, the stomach may be given absolute rest for from three to five days. The foods given by mouth inhibit the gastric secretion and reduce gastric motility to a minimum; the surface of the ulcer is protected by a coating of fat for a considerable portion of each day. Another important consideration is that perhaps much of the benefit that follows the preliminary rest results from the breaking of the suggested vicious secretory circle.

The only criticism that may be made of the diet from the standpoint of the nutritional requirements of the body is the preponderance of fat. This question has already been discussed.

Procedure.—The patient is put to bed to minimize the effect of exercise on gastric motility, to lower his metabolism, and to assist in retaining the enemas. Before treatment is begun, the alimentary tract should be cleared with castor oil or some other laxative.

For from three to five days, depending on the ability of the patient to withstand partial starvation, no food whatever is given by mouth. If thirst is not controlled by the enemas, small quantities of water, from 1 to 3 ounces (from 30 to 90 c.c.) at room temperature, or warmed, may be allowed whenever desired. Cracked ice may be held in the mouth unless the water that is swallowed provokes pyloric spasm.

The Enemas: The glucose enemas are begun on the first day of treatment. They consist of glucose (30 gm.) in 300 c.c. of physiologic sodium chlorid solution. Each morning, before the first nutrient enema, the rectum and sigmoid should be emptied by an enema of soap-suds or sodium chlorid solution (0.7 per cent.). The glucose solution is given, hot, from a vacuum bottle by the drip method at a rate that consumes from half to three quarters of an hour. Three or four such enemas are given daily, equally spaced throughout the sixteen waking hours.

Experience has taught that the average patient readily tolerates a 10 per cent. solution; a few patients are able to retain a 12 per cent. solution; in some, the strength must be reduced to 7 per cent. Intolerance of the enema manifests itself in painful intestinal cramps, though the solution is not always immediately expelled. When cramps occur, the strength of the solution must be reduced, or the number of enemas restricted. The enemas are continued throughout the treatment.

Food by Mouth: On the fourth to the sixth day, feeding by mouth is begun. The only foods permitted are white of egg and olive oil or butter fat. The schedule of feedings should be so arranged that the white of egg and fat are given at different hours, to prevent the delay that fat causes in the passage of the albumin from the stomach. The intervals between the feedings should be made as long as may be feasible; they should not be less than two hours. The total quantity of food should be increased as rapidly as the stomach can take care of it in order to control the loss of weight. The total amount given at any feeding need never exceed 3 ounces (90 gm.); it does not always reach that.

For practical reasons, olive oil is the fat of choice for the average patient. From 1½ to 2½ ounces (45 to 75 c.c.) may be given the first day. It should be given clear; it is taken more easily when it is chilled. The whites of from three to four eggs may be given

8. Newburgh, L. H., and Marsh, P. L.: Use of High Fat Diet in Treatment of Diabetes mellitus, Arch. Int. Med. **26**:647 (Dec.) 1920.

the first day, thoroughly mixed with a small quantity of water, or whipped to a foam or lightly coddled. If desired, the white of egg may be prepared differently for each feeding; a pinch of salt may be added. As treatment progresses, the quantity of oil is increased to a maximum of 150 c.c., and the whites of egg to a total of six or eight.

With some patients, olive oil palls on the taste, and much or all of it must be replaced by some other fat. In such instances, unsalted butter may be employed in corresponding amounts. Unless perfectly fresh, the butter should be washed in water several times to remove any butyric acid that may be present. The butter may be given melted or cold, and a pinch of salt may be added before taking.

For the sake of variety, yolk of egg may be substituted for a portion of the olive oil or butter fat in the proportion of one yolk to about one teaspoonful of the oil or butter. The yolk and the white of egg should not be given together. The yolk may be heated through, but should not be cooked hard. A little sweet butter and salt may be added.

Occasionally, a patient will rebel against all the fats mentioned, and cream must be substituted for them. Twenty-three ounces (690 c.c.) of cream is required to replace 5 ounces (150 c.c.) of olive oil. But cream is not as desirable as olive oil and butter fat because it calls forth a weak gastric secretion, and is not capable of exerting the same demulcent action on the raw surface of the ulcer.

This diet should be continued for from three to four weeks, and, as after other diet cures, only specially selected foods should be allowed for many months.

Results.—All patients lose weight in the earlier part of the treatment because the amount of food is insufficient to cover their nutritive requirements. The extent of the loss depends on the length of time occupied in reaching the desired totals. Consequently, after feeding by mouth is begun, the food should be increased as rapidly as the stomach can take care of it. Usually, the lost weight is recovered before the patient is ready to leave the bed. If the loss of weight in any patient appears dangerously rapid, the diet should at once be modified by the addition of suitable quantities of cream and whole eggs to prevent further loss. Loss of weight will be greater if thirst is not controlled.

Gastric distress quickly subsides after treatment is begun; it may disappear on the first day, and is nearly always gone by the third day. I do not recall an instance in which it has been necessary to seek the aid of drugs to relieve the distress.

SUMMARY

1. In a new diet, recommended for the treatment of peptic ulcer, glucose-salt enemas are given throughout, and, for the first three to five days, only water is allowed by mouth.

2. Feeding by mouth is started on the fourth to the sixth day. The only foods permitted are olive oil or butter fat and white of egg. Later in the treatment, yolk of egg and cream may be added to the diet in replacement of a portion of the other fats.

3. The diet has been in continuous use for twelve years, and the results have proved satisfactory.

59 East Fifty-Fourth Street.

Sight Conservation Classes.—There are 180 sight conservation classes in the public schools of the United States. New York City has the largest number of classes—fifty.—*Am. J. Ophthalmology*, July, 1924.

THE RESULTS OF TRYPARSAMIDE THERAPY IN SYPHILIS*

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The encouraging results of tryparsamide therapy in neurosyphilis reported by Lorenz, Loevenhart and their collaborators,[1] and by us,[2] have been confirmed by further experience. We are now able to present the results of treatment in 195 patients, of whom 133 are neurosyphilitic, observed during the last four years.

RESULTS IN EARLY AND TERTIARY SYPHILIS

The favorable effect of tryparsamide in neurosyphilis is, as we have pointed out,[2] in paradoxical contrast to the comparatively poor results obtained in early or late syphilis without nervous system involvement. That the drug is not a powerful spirocheticidal agent is emphasized by the failure of repeated large doses, as large as 7 gm. each, to heal lesions, or to cause the disappearance of surface organisms, in ten cases of primary or secondary syphilis, though a single subsequent injection of arsphenamin invariably brought about prompt healing. The power of tissue penetrability possessed by the drug invited its thorough trial in tertiary syphilis, especially the cardiovascular type. We have treated fifty-two patients with late syphilis who presented no clinical or laboratory evidence of neuraxis involvement, including nine with cutaneous syphilids, six with gummatous lesions elsewhere than the skin, thirteen with cardiovascular syphilis, and nineteen with no demonstrable lesions but with persistently positive blood Wassermann reactions. In five late cases, the drug was employed solely for its nutritional effect. Visible tertiary lesions were healed slowly or not at all, though subsequently all were rapidly influenced by arsphenamin. Anginal pain, dyspnea, cough or other symptoms of cardiovascular syphilis were inconstantly affected, but the results were not as favorable as in a comparable group treated with the arsphenamins and mercury. There was also almost no effect on the blood Wassermann reaction in these fifty-two patients. This relatively slight therapeutic response, coupled with the danger of visual impairment from tryparsamide, has led us to abandon its use in all types of syphilitic infection except neurosyphilis.

In neurosyphilis, we administer tryparsamide in weekly intravenous injections, in an average adult dose of 3 gm. (from 30 to 50 gm. per kilogram). A course comprises from eight to sixteen injections. We have so far purposely avoided the use of any other drug in immediate combination with tryparsamide, in order to obtain clear cut evidence of its value. In the interval of from two to four months between courses, however, an arsphenamin, mercury or bismuth is given. A blood Wassermann test is performed at the time of each

* This investigation has been partially supported by a grant from the Rockefeller Institute for Medical Research.

* From the Syphilis Division of the Medical Clinic and the Phipps Psychiatric Clinic, the Johns Hopkins Hospital.

* Read before the Section on Nervous and Mental Diseases at the Seventy-Fifth Annual Session of the American Medical Association, Chicago, June, 1924.

1. Lorenz, W. F.; Loevenhart, A. S.; Bleckwenn, W. J., and Hodges, F. J.: The Therapeutic Use of Tryparsamide in Neurosyphilis, J. A. M. A. **80**: 1497 (May 26) 1923. Lorenz, W. F.; Loevenhart, A. S.; Reitz, T. F., and Eck, C. P.: The Use of Tryparsamide in Neurosyphilis, Am. J. M. Sc. **168**: 157 (Aug.) 1924.

2. Moore, J. E.; Robinson, H. M., and Keidel, Albert: Tryparsamide in the Treatment of Syphilis, J. A. M. A. **82**: 528 (Feb. 16) 1924.

intravenous injection, and, when possible, the spinal fluid is examined (cells, globulin, Wassermann titration, and colloidal gold and mastic tests) before and after each course of tryparsamide.

RESULTS IN NEUROSYPHILIS

The results obtained in 133 neurosyphilitic patients are presented in tabular form. We have divided our material into five groups, two of which require definition. Under the heading "asymptomatic general paralysis" are included those patients whose spinal fluids disclose the general paralytic formula (high cell count, strongly positive globulin reaction, Wassermann fixation with 0.1 c.c. of fluid or less, and general paralytic colloidal curves), though neurologic and psychiatric abnormalities are lacking. These persons have usually had syphilis for years, and, in our experience, are likely to develop general paralysis if not treated.[3] As "asymptomatic neurosyphilis, Group 2," we class patients, usually recently infected, who are found to have moderately positive spinal fluids (slight pleocytosis and globulin increase, Wassermann reaction positive with 0.4 c.c. of fluid or more, and colloidal tests usually of the syphilitic zone type).[3] There is ordinarily no clinical evidence of neurosyphilis in this group, though we have arbitrarily included two patients with typical neurorecurrences. The group of "meningovascular neurosyphilis" includes various types of diffuse cerebrospinal syphilis.

TABLE 1.—*Clinical Results from Tryparsamide Therapy*

Type of Neurosyphilis	Number of Patients Reported On	Clinical Result: Well, Remained Well	Arrested, Symptoms Cleared Up	Improved	Unimproved	Worse	Dead
General paralysis and taboparalysis	40	4	9*	10	8	4	5
Asymptomatic general paralysis	17	17	—	—	—	—	—
Tabes dorsalis	24	6	6†	4	6	1	1
Asymptomatic neurosyphilis, Group 2	15	13	—	—	—	2‡	—
Meningovascular	37	13	8§	12	2	—	2
Total	133	53	23	26	16	7	8
Per cent. of total		39.8	17.2	19.5	12.0	5.2	6.0

* Remission of mental symptoms.
† Disappearance of crises, lightning pains, etc.
‡ Recurrent secondary syphilis during tryparsamide.
§ Cranial nerve palsies, headache, etc., cleared up.

The clinical results, summarized in Table 1, are to some extent obscured by the fact that twenty-four patients with general paralysis, sixteen patients with tabes, and thirty-three patients with meningovascular neurosyphilis had been intensively treated just prior to tryparsamide therapy. The duration of this previous treatment ranged from a few months to five years. As a net clinical result, four of the cases of general paralysis, six of the cases of tabes, and thirteen cases of the meningovascular group were clinically arrested at the time tryparsamide was begun, though in every instance serologic improvement had been slight or absent. In these arrested cases, and in the thirty-two cases of asymptomatic neurosyphilis, the clinical effect of tryparsamide therapy cannot be estimated, except to point out that there were no relaspses.

Our estimate of the clinical effect of tryparsamide is based on the results obtained in seventy-eight neurosyphilitic patients, of whom twenty-nine had not been previously treated, and forty-nine had received prior treatment, without complete relief of symptoms.

Among these were thirty-six patients with general paralysis. In this group, remission of all mental symptoms has occurred in nine, and ten are markedly improved. The duration of remissions ranges from a few months to three years, permitting fourteen patients, all with early general paralysis, to return to useful occupations. Twelve patients with advanced longstanding general paralysis are either unimproved or worse. There were five deaths, one by suicide, two from acute infections in patients with unimproved late general paralysis, and two from general paralysis. The last two patients remained well, for two and three years, respectively, after a single course of tryparsamide, plus several courses of arsphenamin, finally suddenly becoming psychotic, and dying within a few weeks.

As with other methods of treatment, clinical and serologic improvement do not necessarily parallel each other, as shown by two patients with general paralysis in whom the spinal fluid became completely negative, though the clinical course was progressively down hill. Conversely, in several instances marked clinical improvement has occurred, while the spinal fluid changes have been relatively uninfluenced.

Lightning pains and gastric crises were improved in three and completely relieved in six of eighteen patients with tabes. In some of these, previous intensive treatment had failed to bring about relief. At the beginning of tryparsamide treatment, these manifestations may be temporarily exacerbated after each injection. In one instance, a Charcot knee has improved during tryparsamide treatment. No definite effect on ataxia has been apparent. The remaining eight patients with tabes, five with crises or lightning pains, one with complete optic atrophy, one with a tabetic bladder, and one with bilateral nerve deafness, are unimproved A single death was by suicide.

The most striking clinical results are obtained in the meningovascular group. There are twenty-four patients in this group, in all except four of whom such symptoms as headache, vertigo, convulsions, and cranial nerve palsies, are improved or completely relieved. The four exceptions are two patients with advanced primary syphilitic optic atrophy as the only demonstrable lesion, and two patients who died, one from cardiovascular syphilis, and the other from miliary tuberculosis.

TABLE 2.—*Effect of Tryparsamide Therapy on Blood Wassermann Reaction*

Type of Neurosyphilis	Number of Patients Reported On	Blood Wassermann Reaction: Negative, Remained Negative	Positive, Remained Positive	Reversed	Reduced	Increased
General paralysis and taboparalysis	34	12	9	9	4	—
Asymptomatic general paralysis	17	7	2	4	1	3
Tabes dorsalis	23	18	1	1	1	2
Asymptomatic neurosyphilis, Group 2	16	10	1	—	—	5
Meningovascular	37	18	13	—	3	3
Total	127	65	26	14	9	13
Per cent. of total		51.1	20.4	11.0	7.0	10.2

This evaluation of clinical results is not final. On the basis of our experience thus far, however, the results of tryparsamide therapy appear to be superior to other methods of treatment, in early general paralysis, in meningovascular neurosyphilis, and in the majority of cases of tabes. Advanced general paralysis seems to be influenced little, if at all.

3. Moore, J. E.: Studies in Asymptomatic Neurosyphilis, II, The Classification, Treatment and Prognosis of Early Asymptomatic Neurosyphilis, Bull. Johns Hopkins Hosp. **33**: 231 (July) 1922.

The effect of tryparsamide on the blood Wassermann reaction in neurosyphilis is as negligible as in tertiary syphilis. As indicated in Table 2, the Wassermann reaction was positive in forty-nine instances at the start of tryparsamide therapy. It was reversed to negative in only fourteen, or 28 per cent. of these, and was reduced in titer in nine. Moreover, there were thirteen instances of a previously negative Wassermann reaction becoming positive during tryparsamide treatment.

TABLE 3.—*Effect of Tryparsamide Therapy on Cytobiology of Cerebrospinal Fluid*

Type of Neurosyphilis	Number of Patients Reported On	Cerebrospinal Fluid: Negative, Remained Negative	Reduced to Complete Negative	Markedly Improved *	Moderately Improved †	Slightly Improved ‡	Unchanged	Worse
General paralysis and taboparalysis	34	—	5	5	13	7	3	1
Asymptomatic general paralysis	14	—	2	4	5	2	1	—
Tabes dorsalis	20	2	8	4	5	1	—	—
Asymptomatic neurosyphilis, Group 2	12	—	10	1	1	—	—	—
Meningovascular	28	1	13	7	4	1	—	2
Total	108	3	38	21	28	11	4	3
Per cent. of total		2.7	35.1	19.4	25.9	10.1	3.7	2.7

* Wassermann reaction positive only with large amounts of fluid; other tests almost or completely negative.
† Wassermann reaction reduced, colloidal curves shortened or negative.
‡ Cells and globulin reduced, Wassermann and colloidal curves unchanged.

Particular interest attaches to these thirteen patients. In all, there was improvement in the cerebrospinal fluid, the fluid becoming completely negative in five, simultaneously with the change of the blood Wassermann reaction in the reverse direction. Eight of the patients presenting this phenomenon had early syphilis, and were within the first two years of their infection. The latter fact, considered in connection with the failure of the drug to heal lesions or to destroy surface organisms in early syphilis, and in connection with the appearance, during treatment, of recurrent secondary lesions in two patients with early neurosyphilis, has an important bearing on the general use of tryparsamide. In spite of the favorable effect on spinal fluid changes, we feel that when syphilis is of less than two years' duration this drug should be used only in combination with an arsphenamin. In attempting to protect the nervous system, one must not forget that serious damage may occur elsewhere in the body, in the absence of adequate spirocheticidal therapy.

In a study of the effect of tryparsamide on the cerebrospinal fluid, the factor of previous treatment, instead of complicating the results, emphasizes their significance. Though eighty-four patients had received prior treatment, often with favorable clinical results, practically all phases of the spinal fluid cytobiology remained positive, in all except two instances. Tryparsamide treatment was undertaken in many of these patients as a forlorn hope. The results, summarized in Table 3, need little comment. Among sixty-eight patients with parenchymatous neurosyphilis, the spinal fluid became completely normal in 22 per cent.; was moderately to markedly improved in 45 per cent.; and was practically uninfluenced (except for a reduction in cells and globulin content) in 32 per cent. In the meningovascular group, 69 per cent. of the fluids of forty-one patients became completely normal; improvement was noted in 34 per cent.; and only 5 per cent. were unimproved.

One must not become discouraged by the failure of a single course of tryparsamide to produce striking clinical or serologic change. Especially for parenchymatous neurosyphilis, it is shown in Table 4 that the more treatment is given, the greater is the response to be expected in the spinal fluid. As with other forms of antisyphilitic treatment, tryparsamide must often be continued for many months to produce appreciable serologic benefit.

The effect of tryparsamide on the spinal fluid changes in neurosyphilis has been in our hands superior in degree and in rapidity to that of any other form of antisyphilitic treatment. We have gained an impression, however, that, in parenchymatous neurosyphilis, serologic changes are more easily accomplished by tryparsamide if intensive arsphenamin therapy has been previously carried out, even though such prior treatment may have failed to influenced the spinal fluid findings. As indicated in Table 5, considerable improvement occurred, following tryparsamide, in 84 per cent. of a group of patients with general paralysis and tabes, who had already been intensively treated, but not serologically improved, by other means; while a similar degree of improvement occurred in only 60 per cent. of those previously untreated. This suggests that the best method of use of tryparsamide may be in combination with an arsphenamin administered intravenously, with intraspinal therapy, or both. Further experience must determine this point.

Twenty of the 133 patients here reported on have fulfilled the requirements for probation of clinical arrest, with blood and spinal fluid serologically normal for one year. These include eight patients with parenchymatous neurosyphilis (four with tabes, two with general paralysis, and two with asymptomatic general paralysis), and twelve patients from the meningovascular group. In an additional eleven patients (two with asymptomatic general paralysis, two with tabes, and seven with meningovascular neurosyphilis), relief from symptoms, and serologic normality have been achieved, but treatment is still being continued. Many of the remaining

TABLE 4.—*Effect of Varying Amounts of Tryparsamide Therapy on Cytobiology of Cerebrospinal Fluid*

Type of Neurosyphilis	Treatment	Number of Patients Receiving	Cerebrospinal Fluid: Rendered Negative No.	%	Moderately or Markedly Improved No.	%	Unimproved or Slightly Improved No.	%
Parenchymatous	1 course	35	3	8.5	16	45.6	16	45.6
	2 courses	16	4	25	6	37.5	6	37.5
	3 or more courses	17	8	47	9	53	..	....
Meningovascular	1 course	25	15	60	8	32	2	8
	2 courses	14	8	57.1	6	42.8	..	....
	3 or more courses	2	2	100	..	....	..	....

cases have been observed for only a few months. The amount of tryparsamide treatment necessary to accomplish these favorable results has averaged from twenty to forty injections, extending over an average period of fifteen months.

VISUAL IMPAIRMENT

Almost the only untoward effect of tryparsamide is a tendency to produce disturbances of vision. These reactions, which have been made the subject of a separate report,[4] may be divided into the classes of sub-

4. Woods, A. C., and Moore, J. E.: Visual Disturbances Produced by Tryparsamide, J. A. M. A. 83:2105 (June 28) 1924.

jective and objective. The symptoms of dim, blurred or dazzling vision are common to each class. In the subjective group, ophthalmologic examination gives negative results, and these patients may usually be given further tryparsamide without fear of permanent damage. In the objective group, the striking change is constriction of visual fields for form, without scotomas, and with or without diminution in visual acuity. If these changes are present, the drug must be permanently withheld.

TABLE 5.—*Influence of Intensive Previous Treatment on the Cytobiology of the Cerebrospinal Fluid as Influenced by Tryparsamide*

Parenchymatous Neurosyphilis	No. of Cases	Cerebrospinal Fluid: Rendered Negative No.	%	Markedly or Moderately Improved No.	%	Unimproved or Slightly Improved No.	%
Previously treated	38	13	34.2	19	50.0	6	15.7
No treatment for at least 6 months	28	3	10.3	14	50.0	11	39.4

Among 241 patients who have received more than 3,000 injections of tryparsamide, 10.2 per cent. have developed reactions of the subjective type, and 5.5 per cent., objective evidence of visual damage. All the twenty-four patients with subjective reactions recovered, with normal vision. Of thirteen patients with the objective type of injury, three have completely recovered; in three, there is slight, in five, moderate, and in two, severe permanent damage to the eyes. One patient is blind. The incidence of noteworthy permanent injury is 2.8 per cent.

Ninety-four per cent. of all reactions occurred early in the course of treatment, by the time of the tenth injection. Within the limits of dosage employed, from 10 to 80 mg. per kilogram of body weight, we have observed no direct relationship between dosage and visual impairment. Disease of the nervous system, especially general paralytic and tabetic neurosyphilis, is to some extent a predisposing factor to ocular injury, though reactions have occurred in six patients with normal nervous systems. Contrary to our early opinion,[2] preexisting syphilitic disease of the optic nerve or retina is not necessarily a contraindication to the use of tryparsamide, but special precaution should be exercised in such patients.

We believe it possible to prevent serious damage to the eyes from tryparsamide by means of careful ophthalmologic control. Before treatment every patient should be examined by a competent ophthalmologist as to visual acuity, fundi, and especially visual fields. Reexamination must be carried out at the first appearance of subjective visual disturbance, and visual acuity and fields compared with those noted before treatment. At this point, objective injury, if present, is usually so slight as to leave useful vision if the drug is permanently withdrawn. The treatment of patients whose mental condition is too dilapidated for cooperation, or the continuation of therapy after changes in visual acuity or fields have occurred, is dangerous.

The danger of visual impairment, however slight, combined with the comparatively poor results of tryparsamide therapy in types of syphilis other than neurosyphilis, leads us to feel that the general use of the drug ought strictly to be limited to neurosyphilis and trypanosomiasis.

SUMMARY

1. In primary and secondary syphilis, or in tertiary syphilis without nervous system involvement, the therapeutic effect of tryparsamide is so slight as to preclude its further general use in these types of infection.

2. In neurosyphilis, on the contrary, tryparsamide therapy produces favorable clinical and serologic results, which we believe cannot be equaled by other forms of treatment.

3. Tryparsamide is of particular value in early general paralysis, in meningovascular neurosyphilis, and in the majority of cases of tabes. Advanced general paralysis is benefited little, if at all.

4. In early neurosyphilis, the comparatively feeble spirocheticidal value of tryparsamide precludes its use unless in combination with an arsphenamin.

5. The best method of use of tryparsamide has not yet been developed.

6. Visual disturbances following tryparsamide have occurred in 17.8 per cent. of a series of 241 cases; but in only 2.8 per cent. has noteworthy permanent visual injury resulted.

7. This untoward effect may be largely obviated by appropriate ophthalmologic control of treatment.

A COMPARISON OF TRYPARSAMIDE AND OTHER DRUGS IN TREATMENT OF NEUROSYPHILIS*

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The literature on the use of tryparsamide is exceedingly limited, and consists of the work of Brown and Pearce[1] on the experimental side; the work of Pearce,[2] Chesterman,[3] Van den Branden and Van Hoof[4] and Smillie,[5] in the treatment of trypanosomiasis; the work of Lorenz, Loevenhart, Bleckwenn and Hodges[6] in the treatment of neurosyphilis; and the work of Moore, Robinson and Keidel[7] in the treatment of various stages of syphilis, including neurosyphilis. This is a limited background, but, because of the important results reported, their publications are of unusual significance.

* From the Boston Psychopathic Hospital and the Massachusetts General Hospital, Boston, Mass.

* Read before the Section on Nervous and Mental Diseases at the Seventy-Fifth Annual Session of the American Medical Association, Chicago, June, 1924.

* This study was aided by a grant of funds from the Division of Mental Hygiene, Massachusetts Department of Mental Diseases, and under a Dalton Scholarship, Massachusetts General Hospital. The tryparsamide was made available through the courtesy of the Rockefeller Institute.

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2. Pearce, Louise: Studies on the Treatment of Human Trypanosomiasis with Tryparsamide (Sodium Salt of N-Phenylglycineamide-*p*-Arsonic Acid), J. Exper. Med. (supplement) **34**: 1 (Dec.) 1921.

3. Chesterman, C. C.: Tryparsamide in Sleeping Sickness: A Study of Forty Cases, with Especial Reference to the Cerebrospinal Fluid, Tr. Roy. Soc. Trop. Med. & Hyg. **16**: 394 (Jan.) 1923.

4. Van den Branden, F., and Van Hoof, L.: Résultats de l'observation de malades trypanosomés traités au tryparsamide, Bull. Soc. de path. exot. **16**: 606 (Oct.) 1923.

5. Smillie, W. G.: The Treatment of Mal de Caderas with Tryparsamide, J. Am. Vet. M. A. (Sept.) 1923.

6. Lorenz, W. F.; Loevenhart, G. S.; Bleckwenn, W. J., and Hodges, F. J.: The Therapeutic Use of Tryparsamide in Neurosyphilis, J. A. M. A. **80**: 1497 (May) 1923.

7. Moore, J. E.; Robinson, H. M., and Keidel, Albert: Tryparsamide in the Treatment of Syphilis, J. A. M. A. **82**: 528 (Feb.) 1924.

Our present interest is in a discussion of the effects of tryparsamide in the treatment of various types of neurosyphilis. Therefore, in the consideration of the published reports, those of Lorenz and his co-workers and Moore and his co-workers are the ones to be considered. Lorenz and his co-workers reported exceedingly good results in the treatment of general paralysis and tabes dorsalis, as well as meningovascular types of neurosyphilis, the results obtained never having been equaled by the use of any other drug. Moore and his co-workers have, according to their publication, obtained results that are almost identical.

For practical purposes, the most important consideration always is the clinical condition of the patient. Unfortunately, however, the interpretation of the clinical state is a matter that brings in the personal equation. Especially is this true in syphilis of the nervous system, in which the condition is chronic, the progress is often extremely slow, there are spontaneous improvements, and the symptomatology is such that one is easily led astray. A period of years is necessary before one can be relatively or absolutely sure that he is not misinterpreting slight remissions as arrest. This warning in regard to the interpretation of results applies to the present authors as well as to previous writers on this subject. The two reports mentioned are by men whose clinical judgment, based on much experience, can be trusted thoroughly. Nevertheless, we do feel that arrest and improvement are terms that are not easy to define nor their interpretation easy to check up.

Lorenz and his co-workers reported seventy-eight cases of parenchymatous neurosyphilis treated with tryparsamide, showing arrest in nearly 63 per cent. and improvement in another 15 per cent.; figures that may be considered as showing a far better result than anything that has been given in the past. Moore and his co-workers, with twenty-seven cases, have given us almost similar results; namely, 66 per cent. arrested and 15 per cent. improved. Each group of investigators reported ten treated cases of meningovascular syphilis with arrest, in each series, of nine cases and improvement, in each instance, of the remaining one. Because of the possibility of misinterpretation of clinical findings, the serologic results are of particular value. Here, again, the results reported are better than had even been obtained previously, and, with the exception of the findings in the blood Wassermann test, the two groups of investigators are in very close accord.

The reduction of cell count in the spinal fluid is particularly striking, each investigator reporting from 85 to 99 per cent. improvement in their series and, moreover, 65 per cent. of the cases, after treatment, showing entirely negative cell counts. Globulin also is reported greatly reduced in 92 per cent. of the parenchymatous cases by Lorenz and in 66 per cent. of the cases by Moore. The Wassermann reaction in the spinal fluid was reported as reduced in 87 per cent. by Lorenz, and in 82 per cent. by Moore. Of more significance is the fact that Lorenz obtained negative spinal fluid Wassermann reactions in practically 35 per cent. of the cases and Moore in 30 per cent. This finding is of extreme importance in representing a very definite, incontestable result. The colloidal gold test was also reported as showing most satisfactory improvement. Unquestionably, a serologic improvement is a very good index that something of satisfactory nature has been accomplished. While some cases in which the serology is improved do not make particularly good clinical progress, nevertheless, in the large, clinical progress is more satisfactory in cases which show serologic improvement.

RESULTS OF INVESTIGATION

With this brief review as a background, we present the results obtained by us in the treatment of more than 100 cases of neurosyphilis with tryparsamide, comparing our clinical results with those previously reported. An exact tabular or statistical comparison cannot be made because of the short time in which patients have been treated and because of the difficulty, mentioned above, in estimating clinical improvement on a percentage basis. The results indicated are impressions based on careful investigation and collation of evidence, but they do not lend themselves to mathematical formulation. A comparison of serologic findings will also be made. Further, we report a few cases treated by other methods as a means of comparison with those cases treated by tryparsamide.

We have treated cases of neurosyphilis with tryparsamide for about eleven months. This period is, we feel, too short to enable us to make a very specific analysis. However, it is sufficient to give us some index of the results obtained. The conclusions are largely personal and, of course, stand for modification in the future. It may be said at the outset that our experience has not proved as satisfactory, from the clinical standpoint, as that reported by our predecessors, nor have the serologic findings been quite as gratifying. We have had no single case of parenchymatous neurosyphilis which has given an entirely negative spinal fluid finding as the result of treatment with tryparsamide, although two cases of tabes dorsalis approximate a perfect serologic result, one of which is as follows:

CASE 1.—C. S., a man with tabes of several years' standing, was given nine weekly intravenous injections of 3 gm. of tryparsamide at the Massachusetts General Hospital. A strongly positive spinal fluid Wassermann reaction was changed to negative, the cells were reduced from 84 to 8, and the colloidal gold curve, negative at the beginning, remained unchanged. The protein, originally slightly increased, was not affected.

SEROLOGIC FINDINGS

We have succeeded in obtaining some serologic improvement in almost all our cases. Certainly we confirm the statements made by our predecessors in regard to the reduction of the cell count in the spinal fluid. Almost invariably in all forms of neurosyphilis, after from six to eight injections, the cells become less than 10 per cubic millimeter. In a group of eleven cases of tabes dorsalis with cell counts varying between 17 and 108, all were reduced below 10 in a few weeks. This reduction in the cell count in the spinal fluid was particularly striking in some of our cases which had received long periods, often several years, of treatment by other methods, without having obtained a negative cell count.

CASE 2.—K. B., a man, with typical general paralysis, was committed to a state hospital, where he received seventeen injections of arsphenamin. There was a very satisfactory clinical remission. He then, as an outpatient, received forty-one injections of arsphenamin in the succeeding eleven months. Despite the clinical improvement, the patient's serologic condition remained unchanged. Three spinal fluid examinations showed cell counts of 28, 35 and 22, respectively.

After ten injections of tryparsamide, the cell count was 6. A subsequent count was 3, and a final count, in January, 1924, showed no cells in the specimen examined. It may be worth while noting that the other spinal fluid tests, including the Wassermann reaction, globulin, and colloidal gold reaction,

showed absolutely no change after twenty injections of tryparsamide.

CASE 3.—C. H. C., a man, aged 40, affected with tabes, admitted to the Massachusetts General Hospital, although infected in 1900, began to show symptoms in 1919. Forty-six intravenous treatments with arsphenamin over a period of five years had only once lowered the cell count in the spinal fluid below 30. Six intravenous treatments of tryparsamide, 3 gm. each, changed the cell count from 36 to 5, and the spinal fluid Wassermann reaction from strongly positive to negative.

Globulin has been reduced in amount in a large number of cases, but the test has very rarely become negative. In one case of tabes, the protein dropped from 138 to 32 mg. per hundred cubic centimeters after eight intravenous treatments of 3 gm. each. In many cases, the reduction was about one third; rarely was there any increase in protein.

The same, moreover, is true of the Wassermann reaction in the spinal fluid. We have been able to obtain a diminution in the strength of the reaction, but only in a relatively few striking cases have we been able to obtain negative reactions. The spinal fluid Wassermann results have been more encouraging in tabes dorsalis than in other forms of neurosyphilis. In the Massachusetts General Hospital series of fourteen cases, the spinal fluid Wassermann reaction was made negative in more than 50 per cent. after one intravenous course of from six to nine treatments. All but two of these cases showing a change to a negative Wassermann reaction had previously shown a strongly positive reaction. Of seventy-one cases of various types treated with tryparsamide, the spinal fluid Wassermann reaction was changed from positive to negative in twelve, was reduced in strength in six, and was unchanged in fifty-three. Practically all the changes from positive to negative were in patients with tabes dorsalis.

CASE 4.—H. B., a man, was seen at the Psychopathic Hospital, where a questionable diagnosis of general paralysis was made; questionable because, although the serologic tests were typical, the patient did not show a psychosis or typical speech defect.

In February, 1921, the patient had a convulsive seizure. In March, 1921, a second seizure occurred. Again, in August, 1922, he had several more seizures. The patient had unequal Argyll Robertson pupils, hyperactive knee-jerks, and possibly a slight, though not very definite, slurring in his speech. Mentally, he was conceivably euphoric, but there was no definite evidence of a psychosis, nor was there any memory defect or difficulty with arithmetical tests.

From August, 1922, to June, 1923, the patient received fifty-four injections of arsphenamin, three intraspinal injections, and eighteen spinal drainages. At the end of this treatment, the spinal fluid findings were: Wassermann reaction, positive with 0.4 c.c.; globulin, 3+; albumin, 3+; cells, 22 per cubic millimeter; colloidal gold curve, 5555330000. After thirty tryparsamide injections, his spinal fluid, in May, 1924, showed a negative Wassermann reaction with 1 c.c.; globulin, 2+; albumin, 2+; cells, 0; colloidal gold curve, 5543310000.

CASE 5.—P. M., a man, came under treatment at the Psychopathic Hospital in January, 1919, with the signs and symptoms of a slowly progressive tabes, characterized by typical reflex changes, pain, girdle sensation, and ataxia. During the treatment this patient presented a situation that teaches a very important lesson in dealing with spinal fluid reactions. At the time of admission, the cerebrospinal fluid was strongly positive. The cell count was 134. The Wassermann test was positive in 0.05 c.c. There was a moderately positive colloidal gold test. From January, 1919, to June, 1923, the patient received a considerable amount of treatment, consisting of 106 injections of arsphenamin, twelve intraspinal injections, four intracisternal injections, twenty-three spinal drainages associated with the arsphenamin injections, and twelve spinal drainages associated with mercury injections.

During this period of treatment the spinal fluid findings varied greatly. At times there was no globulin; albumin and the cell count were normal, and the colloidal gold test was negative. This would be succeeded by more strongly positive reactions. At times the Wassermann test became negative in 0.4 c.c. and then later would be positive again with 0.1 c.c. Thus, in the examination of May, 1923, cells, globulin, albumin, and the colloidal gold test were all found to be negative, while the Wassermann test was positive with 0.3 c.c. In June, just prior to the beginning of tryparsamide treatment, the Wassermann reaction was positive with 0.1 c.c. There were 30 cells per cubic millimeter; globulin was 1+; albumin was 1+, and colloidal gold test negative. After four tryparsamide injections, the fluid showed a negative Wassermann reaction in 0.4 c.c.; 27 cells per cubic millimeter; globulin, 1+; albumin, 1+, and colloidal gold test negative. Aften ten injections of tryparsamide, we were delighted to find the fluid giving a negative Wassermann reaction with 1 c.c.; globulin, 1+; albumin, 2+; 1 cell per cubic millimeter, and a negative gold test. However, subsequently, after twenty-six tryparsamide injections, the Wassermann reaction was positive in 0.4 c.c., and after thirty-five injections it was positive in 0.6 c.c. In other words, although we succeeded in producing a negative Wassermann reaction with tryparsamide, it did not remain negative during the continuation of this treatment, and, on several occasions during this treatment, the cell count rose, on one occasion to 112 cells per cubic millimeter. We have had similar experiences with variation in the spinal fluid findings in cases treated by other methods. It demonstrates the need of considerable caution in interpretation of improvement shown on one or two examinations of the spinal fluid.

The colloidal gold curve has been slightly reduced in a number of cases, and, in a few, made negative. On the whole, however, it has not responded very markedly to treatment with tryparsamide.

To sum up the serologic findings as obtained by us, we conclude that there is a prompt, definite and striking effect on the cell count; that the effect on the globulin is rather satisfactory, but not particularly so; that the effect on the spinal fluid Wassermann reaction, with the exception of a few cases, is not remarkable; and that the effect on the colloidal gold curve has been, on the whole, of little consequence, although a few striking results have been observed.

COMPARISON OF TREATMENTS

In order to have a basis of comparison with other forms of treatment, we have two controls: (1) We have treated with tryparsamide a group of cases which have had other types of treatment previously; (2) we have treated a group of cases by a variety of methods, including intravenous arsphenamin, serum injections into the lumbar and cisternal subarachnoid spaces, and serum injections into the cerebral ventricles.

Considering the first group of cases, which have had a long period of treatment by other methods and have then been put on tryparsamide, we obtain some interesting findings. First, there are a few cases in which serologic improvement was more satisfactory after tryparsamide was used. These cases represent a brilliant result for tryparsamide, showing that we are able, in these cases at least, to accomplish what other methods had not accomplished. However, this group of cases is exceedingly small, comprising not more than 5 per cent. of the total number.

CASE 6.—J. T., a man, aged 38, affected with tabes, seen at the Massachusetts General Hospital, had had a primary infection seven years before. The chief symptoms were lancinating pains, ataxia of the legs, and paresthesia of the feet. The pupils did not react to light, deep reflexes were absent, and the Romberg sign was positive. Intravenous treatment for

two years failed to improve the situation either clinically or serologically. Intravenous treatment plus spinal fluid drainage, followed by two years more of intensive intravenous treatment, left the patient with a strongly positive spinal fluid Wassermann reaction and 75 cells per cubic millimeter. Clinically, he had had pain after each treatment with arsphenamin, and now showed increasing sphincter difficulty and ataxia. After eight intravenous treatments with tryparsamide, 3 gm., the spinal fluid Wassermann reaction became negative and the cells were reduced to 8. There was also some clinical improvement. In this case, serologic results analogous to the foregoing had never been obtained by intravenous arsphenamin. The spinal fluid Wassermann reaction had always been strongly positive. This patient, then, from a serologic as well as a clinical standpoint, was distinctly improved.

CASE 7.—C. M., a man, when seen at the Psychopathic Hospital, had a complete optic atrophy in one eye, the vision in the other eye being entirely normal. When he came under treatment in 1921, he showed a Wassermann reaction positive in 0.3 c.c.; globulin, 1+; albumin, 1+; 7 cells per cubic millimeter, and a colloidal gold curve typical of general paralysis. From April, 1921, to March, 1923, he received thirty-five intravenous injections of arsphenamin, with eleven spinal drainages. This treatment produced no change in the serologic condition. The patient was then given eleven more arsphenamin injections, six intraspinal injections, and five spinal drainages. Under this treatment, the spinal fluid showed considerable improvement, reading as follows: Wassermann reaction, negative in 0.4 c.c.; globulin, none; albumin, 1+; 6 cells, and a negative colloidal gold curve.

The patient discontinued treatment until September, when he was put on tryparsamide. The first spinal fluid examination after his rest, which was made after one tryparsamide injection, showed that the reactions had become strongly positive, with the Wassermann test positive in 0.1 c.c.; globulin, 2+; albumin, 2+; 39 cells, and colloidal gold curve, 4411000000.

After twelve tryparsamide injections, the spinal fluid was positive in 0.6 c.c. and all other tests were negative. After eight more tryparsamide injections, the Wassermann test was positive in only 1 c.c., all other spinal fluid tests being negative. In addition to exemplifying one of the very best results we have obtained serologically by the use of tryparsamide, this case is of interest in showing that tryparsamide may be used in certain cases of optic atrophy.

In contrast to this group of cases, we have several cases in which serologic improvement of a very satisfactory type was obtained by the use of other methods, and then the patient placed on tryparsamide without any further improvement.

CASE 8.—J. S., a man, when admitted to the Psychopathic Hospital in January, 1922, was an apparently markedly demented general paralytic, having all the characteristics of general paralysis, mental, physical and serologic. The Wassermann reaction was positive in 0.05 c.c. in the spinal fluid, and the colloidal gold test gave complete precipitation in all ten tubes. Under very intensive treatment, consisting of intravenous arsphenamin, intraventricular, intracisternal and intraspinal injections and spinal drainage, the patient made an excellent clinical recovery. The spinal fluid was almost negative, showing a negative Wassermann reaction in 0.6 c.c., no globulin, normal albumin, 1 cell per cubic millimeter, and a negative colloidal gold curve.

In June, 1923, the patient was given tryparsamide and mercury intramuscularly. From June, 1923, to April, 1924, he received thirty-two injections of tryparsamide, at which time the spinal fluid was positive with 0.4 c.c.; contained no globulin; had normal albumin; 5 cells, and a colloidal gold curve of 432000000. Three previous spinal fluid examinations made while the patient was receiving tryparsamide showed that the spinal fluid remained the same as in the other treatment. That is, no further improvement took place and, as indicated, the spinal fluid examination, after thirty-five injections of tryparsamide, showed stronger positive reactions than when we began the use of tryparsamide. In other words, whereas we were obtaining a definite and progressive serologic improvement prior to the use of tryparsamide, this improvement did not continue when tryparsamide was given, apparently showing that tryparsamide was unable to accomplish as much as was accomplished by other methods.

CASE 9.—O. E., a man, aged 43, affected with tabes, seen in 1922, had a practically normal gait. The spinal fluid Wassermann test was strongly positive, the cells 57, and the total protein 74 mg. per hundred cubic centimeters. Under four courses of arsphenamin in one and one-half years, the patient gained 20 pounds (9 kg.), and the spinal fluid was improved as follows: Wassermann test, negative; cells, 40; total protein, 56 mg. per hundred cubic centimeters. The patient was given eight intravenous weekly treatments of tryparsamide, 2 gm. each. During this course of treatment, the patient broke down physically, with severe pains; micturition became more difficult, and he was unable to work for two weeks. The spinal fluid Wassermann reaction again became moderately positive, and the total protein increased to 93 mg. per hundred cubic centimeters, although the cell count was reduced to 2. Two months later, the patient was again improving under arsphenamin.

From our own experience, and not considering that of the other workers, we draw the following conclusions in regard to the effect on serologic reactions of the use of tryparsamide as compared with other drugs: Tryparsamide is more effective in the reduction of the cell count than either arsphenamin or subarachnoid injections, although the same effect has been obtained by subarachnoid injections over, perhaps, a longer period of time. It has been our experience that tryparsimide is not more effective in general, in reducing spinal fluid findings other than cell count, than are those other methods of treatment, except in certain of our cases of tabes dorsalis. In most cases, the amount of protein has been somewhat reduced; the colloidal gold curve has rarely been changed, and the Wassermann reaction only occasionally either changed to negative or reduced in strength.

Concerning the clinical results, we have considerable hesitancy in expressing ourselves because of the difficulties already mentioned and, in addition, because we have obtained no astounding or brilliant effects. In other words, although we have had results that are clinically very satisfactory, they are not of such a striking nature that we can at once speak of the superiority of tryparsamide to other methods of treatment.

As regards the milder meningovascular type of syphilis, our general impression is that the patient does not respond clinically any more satisfactorily to tryparsamide than he does to subarachnoid and intravenous injections given in the conventional manner.

CASE 10.—W. M., a man, aged 41, was brought to the Psychopathic Hospital in May, 1919, because of inability to work and some slight mental peculiarities. Examination showed unequal, Argyll Robertson pupils, exaggerated tendon jerks, and a mental state best characterized as psychoneurotic with hypochondriacal ideas.

The spinal fluid showed a weakly positive Wassermann reaction, 133 cells per cubic millimeter, slight globulin, increased albumin, and a weak syphilitic colloidal gold curve. Twenty-one injections of arsphenamin and one intraspinal injection were sufficient to produce an entirely negative serologic reaction and a complete clinical improvement, and to date there has been no return of symptoms or pathologic serologic reaction.

CASE 11.—C. T., aged 33, was seen in 1920, when the patient had facial pain but no signs of central nervous system syphilis, except serologically. The blood and spinal fluid Wassermann reactions were strongly positive, and 62 cells per cubic millimeter, with an increase of protein, were found in the fluid. Thirty-nine intravenous treatments with arsphenamin over a period of three years failed to change the tests in the spinal fluid. On eight examinations, the cells ranged from 11 to

136 per cubic millimeter, while the Wassermann reaction always remained strongly positive in both blood and spinal fluid. Four intracisternal treatments reduced both the Wassermann reactions to negative and the cells to 9 in the spinal fluid. Nine months after the last intracisternal treatment, the blood and spinal fluid Wassermann reactions were still negative, and only 1 cell per cubic millimeter was found in the spinal fluid. From a clinical point of view, the patient did very well. The pain disappeared and there was a notable gain in weight and strength. No new signs or symptoms have developed in the last year.

In the cases of tabes we have, on the whole, had good results. Many patients did very well serologically, some improved clinically, and only one broke down under treatment. Our results with intraspinal forms of treatment, however, have almost uniformly been better, although the more elaborate technic and the time consumed do not favor this method as compared with the simple intravenous tryparsamide treatment. There is a possibility, nevertheless, that more prolonged treatment with tryparsamide will give equally good results, and, if such is the case, a very important drug has been added to our antisyphilitic remedies. We feel that, because of the ease with which tryparsamide can be given, we should be strongly prejudiced in its favor, provided equally good results could be obtained, as compared with our known results with the intraspinal methods. Our results in cases of tabes dorsalis, even after a few treatments over a short period of time, point in that direction.

In cases of general paralysis, we have had no striking or brilliant results. We have had several deaths of patients treated by this method, not as a result of tryparsamide, but indicating inability of the drug to arrest the process.

CASE 12.—H. S., a man, was brought to the Psychopathic Hospital in May, 1923, where a diagnosis of general paralysis was made on the basis that the patient had become progressively more forgetful for six months and, on admission to the hospital, was found to be stupid, showing a loss of memory, depression and characteristic speech defect. His neurologic examination, except for the speech defect, was quite negative. The spinal fluid was characteristic of general paralysis.

He received fourteen injections of tryparsamide, with intramuscular injections of mercury. A total amblyopia resulted. He deteriorated rapidly, became feeble and bedridden, and died a typical general paralytic death.

We have had to discontinue the use of the drug in several other cases because the patient was going down hill so rapidly and the mental symptoms were increasing to such an extent that treatment could not be continued. In some other cases, after a preliminary and brilliant improvement, the patient has failed. In other cases, improvement has resulted.

CASE 13.—J. P., a man, was admitted to the Psychopathic Hospital in May, 1923, with the signs of typical general paralysis. At times he was happy, euphoric and excited; and at times he was quiet and depressed. The serologic reaction was typical of general paralysis. He received eight arsphenamin injections, two intraspinal, and three cisternal injections during May. In June tryparsamide treatment was begun. He received sixteen injections. At the beginning of the treatment he apparently showed some improvement, but this was very short-lived. He became more and more confused and began to deteriorate both mentally and physically. There was no change in the serologic reaction. He complained of severe headaches, dizziness, and dimness of vision. He lost greatly in weight, and was becoming so weak and so obviously deteriorated that treatment had to be discontinued.

CASE 14.—Mrs. J. H., aged 35, rather suddenly, in August, 1923, had an attack of dizziness, weakness, irritability and an ataxic gait. She became unstable emotionally and silly. Her speech was slurring. The blood and spinal fluid Wassermann tests were strongly positive and the spinal fluid contained 58 cells, 174 mg. of protein, and showed a colloidal gold curve of 5555320000. After eight treatments with tryparsamide, the cells were reduced to 4 and the protein to 121 mg., but the Wassermann and colloidal gold reactions were unchanged. Clinically, however, the improvement was marked. Dizziness, weakness and irritability disappeared; her speech improved, as well as her emotional status. After a second course of intravenous tryparsamide, eight doses of 3 gm. each, the protein was reduced to 108 mg., the other tests remaining unchanged. Eight more treatments, thirty-two in all, failed to change the serologic reactions, but, clinically, more improvement was noticed. Eight months of continuous treatment, therefore, resulted in a good clinical improvement. The only serologic change was in the cell count, which was reduced to normal, and the protein, reduced one-third. From the latter point of view, the prognosis must be considered poor, and it is certainly not as good as in some of our cases treated with intracisternal serum injections over a shorter period of time.

It is not in our power to say that the tryparsamide has given us either better or worse results than we obtained with other intensive methods of treatment. It is much like arsphenamin in the respect that a feeling of well-being is engendered, probably, however, to a greater extent. A voluntary nonsyphilitic who desired to see the result of the drug reported that it was better than any cocktail that he ever took, and that he felt "like a million dollars" for twenty-four hours after the injection.

Many of the patients begin to gain weight in a most striking fashion, some rapidly, after beginning a course of tryparsamide. However, nearly all these patients begin to lose weight after a number of weeks and come down to their former weight level. This change of weight was not nearly so striking in the tabetic cases. A few gained 5 pounds (2.3 kg.), none more.

DISADVANTAGES OF TRYPARSAMIDE

The unpleasant results of the use of tryparsamide should be mentioned. The most important, as already reported by the other workers, is the production of an amblyopia. This is a matter of very serious consequence. We have had at least three patients in whom an apparently permanent impairment of vision has resulted. One of these patients was a man with arrested neurosyphilis with negative serologic reactions, who was given tryparsamide because of periodic depressions. After three injections of tryparsamide, he developed a very marked amblyopia, which slowly improved but left him with a visual defect. Another patient developed transient amblyopia after each treatment, each attack clearing up to normal.

Immediate reactions of a nitritoid type were rarely seen. We have had but one patient who, after tryparsamide treatments, developed an edema of his mucous membranes of a very high degree similar to that which made the discontinuance of arsphenamin imperative after two years of uneventful treatment. A number of patients, however, complain of headache, slight nausea, dizziness, and mental confusion for from twenty-four to forty-eight hours following treatment. These effects have been entirely temporary and without any serious result. We have never seen a vein thrombosed as a result of tryparsamide injections, nor has any difficulty arisen from leakage of a small amount of tryparsamide about the veins. We have had two very unpleasant gluteal abscesses as a result of intramuscular injections of the drug. One patient who had arsenical dermatitis following arsphenamin treatment took a course of tryparsamide without dermatologic effect.

SUMMARY AND CONCLUSION

During a period of eleven months, about 100 cases of neurosyphilis of various types have been treated with tryparsamide at the Boston Psychopathic Hospital and at the Massachusetts General Hospital. The usual technic was the intravenous injection of 3 gm. of tryparsamide at weekly intervals. Mercury and arsphenamin were also occasionally given. Occasional rest periods were given. No immediate reactions of serious nature were encountered. Four patients, however, developed a considerable degree of amblyopia, in three of which a permanent defect remained. Mild and fleeting amblyopias were also encountered.

The effect on the pleocytosis in the spinal fluid was very striking. In nearly every case, the cell count was reduced to normal after six or eight injections. These results were obtained, moreover, in some cases in which previously much antisyphilitic treatment had been given without developing a normal cell count. Globulin and total protein have been reduced in many cases, but, as a rule, only to a relatively small extent and in but few cases have these tests become negative.

The Wassermann reaction in the spinal fluid has not been greatly affected in the majority of cases, including a number in which more than thirty tryparsamide injections were given. There were, however, a number of striking exceptions in which the Wassermann reaction was made negative, some of these being cases in which long periods of treatment with other methods had failed to accomplish this result. The Wassermann reaction was made negative in about one half of the cases of tabes dorsalis.

The colloidal gold curve was apparently less affected by tryparsamide than any of the other spinal fluid tests.

In contrast to the cases in which tryparsamide has apparently been more efficacious than arsphenamin and subarachnoid injections, there were cases in which the latter methods produced better serologic results than tryparsamide.

Clinical improvement has been noted in various types of cases of neurosyphilis treated with tryparsamide. The most pronounced improvement was obtained in the meningovascular cases, but it was no more satisfactory than we have been accustomed to obtain with other methods. The clinical improvement in cases of tabes dorsalis was not so marked as was the serologic improvement, and we believe that the clinical improvement in these cases was, on the whole, less satisfactory than we have been able to obtain by other methods. Some improvement occurred in the cases of general paralysis, but in only a relatively small number. It does not seem to us that improvement has been more satisfactory with tryparsamide than with the older methods of intensive therapy by intrathecal, lumbar, cisternal and ventricular injections.

From our experience we conclude that tryparsamide definitely affects cases of neurosyphilis, in some instances giving results better than can be obtained by our older methods alone, and in other cases not giving as good results. Its ease of administration without any discomfort to the patient is a point of superiority. Its tendency to produce toxic effects on the optic nerve necessitates great caution in its use. We believe that the best results may be obtained by its use in conjunction with other antisyphilitic methods.

Finally, we would emphasize our belief that tryparsamide is an important addition to our antineurosyphilitic drugs.

ABSTRACT OF DISCUSSION

ON PAPERS OF DRS. EBAUGH AND DICKSON; THOMPSON; LILLIE; MOORE, ROBINSON AND LAYMAN, AND SOLOMON AND VIETS *

DR. WALTER F. SCHALLER, San Francisco: Dr. Henry G. Mehrtens has been experimenting with this drug at Stanford, and I have studied his cases with him. This study was limited to cases of general paralysis and taboparalysis which had not done well under methods of treatment, including intraspinal therapy, which we advocate and practice. The clinical results in twenty-four cases, in which 225 treatments were given, are: much improved, seventeen; somewhat improved, four; failures, three. All of these patients received mercury. Of the seventeen patients much improved, thirteen have gone back to work, nine of whom are back at their old positions with the same pay as before, while four are working with a defect. Of the patients that are much improved, fourteen have a normal cell count, while in the other three cases it is slightly above normal but not over 7 cells. The cell count in the four cases somewhat improved is above normal but not over 10 cells. The three failures also show some improvement in the cell count. Of the patients that are improved, two now have a negative Wassermann reaction in the cerebrospinal fluid. The three failures show no significant improvement in the spinal fluid Wassermann reaction. In no case has the cerebrospinal fluid become entirely negative throughout, and in no case has the colloidal gold test become entirely negative. As a whole, the patients have increased in weight and strength under the treatment with tryparsamide. It is interesting to note that the three cases reported as failures show loss of weight to emaciation. Two cases made a striking improvement. One of these showed no change in the serology except reduction of cell count. This patient receeived eighteen consecutive injections of tryparsamide, with one short intermission during which the drug was not obtainable. The other case was that of a lithographer who had a marked tremor and was let out of his position on account of defect in his manual work. After treatment he was not taken back in his old position, but secured a similar position elsewhere and he is now doing satisfactory work. The eye clinic examined all cases before treatment was commenced. One patient had a mild optic atrophy before treatment, which was not influenced by the drug. Two patients developed a mild neuroretinitis, which cleared after the drug was discontinued.

DR. JAMES B. AYER, Boston: I was associated with Dr. Viets, who collaborated with Dr. Solomon in the preparation of their paper. Two reasons may be given to explain why the Boston group is not too enthusiastic over its results with tryparsamide; first, we have in our series a number of cases refractory to other forms of treatment, in which tryparsamide has also failed; secondly, I feel that Dr. Solomon has had such good results from other forms of treatment in certain cases of general paralysis that very much was to be expected from any new treatment to impress him favorably. In spite of our not too enthusiastic attitude, we have certainly seen results from tryparsamide which are encouraging, so that our attitude is not at all one of pessimism. While not exactly jealous of the syphilologist or internist or anybody else who wants to treat syphilis, I do believe that neurologists should treat neurosyphilis, simply because the treatment consists of something more than treating a plus or minus in the blood or fluid. For example, not infrequently I am asked to use antisyphilitic medication in the treatment of a Charcot joint. I have never seen beneficial effects on the condition of Charcot joint from antisyphilitic medication. There may be exceptions, but I have not seen them. There are also other types of syphilis which are not amenable to antisyphilitic treatment. Dr. Solomon has raised the point as to intracisternal injections of serum. I have no statistical conclusions to offer on that subject, but I should like to say that that treatment in the hands of Dr. Solomon and of Dr.

* The papers of Drs. J. E. Moore, H. M. Robinson and R. S. Lyman and of Drs. H. C. Solomon and H. R. Viets, together with the discussion, conclude the symposium on the treatment of neurosyphilis. The papers by Drs. F. G. Ebaugh and R. W. Dickson, by Dr. Loyd Thompson, and by Dr. W. I. Lillie were published last week.

Viets and myself has proved a boon in a number of cases which have resisted everything else that we have done. An occasional optic atrophy that does not readily yield to other forms of treatment has yielded or at least has become stationary under that form of treatment. One meningosyphilitic patient who had reached the limit of jaundice and of nephritis from arsphenamin and mercury, and who was rapidly getting worse serologically and clinically, was treated in this way with prompt relief. General paralysis seems to be influenced at least by intracisternal serum injections. So, while we are pushing our investigations of tryparsamide we are also correlating these other methods of approach to the nervous system. While undoubtedly the subject is becoming more and more complex, surely we are getting somewhere. I feel hopeful that a rational treatment of general paralysis, which is the dreaded form of neurosyphilis and so far inadequately treated, is coming a little nearer to us, and that some modification or combination of what we have is likely to bear fruit in the future.

DR. J. H. STOKES, Rochester, Minn.: We have two groups of results. The first group comprises results secured by the standard methods of treatment of neurosyphilis, and the second group deals with tryparsamide. The first group summarizes both clinical and serologic improvement. It depends on the rehabilitation and reconstruction of the patient in every sense of the word. I should like to emphasize the point Dr. Solomon brought out—that we are not by any means helpless without tryparsamide, valuable as is this agent. The older methods of treatment certainly do produce results. Our series covers 405 cases observed over a period of from two to seven years. Not one of these patients has had less than two courses of treatment. All cases have been carefully and systematically checked from every standpoint. In meningeal syphilis we obtained excellent and good results, both clinically and serologically, in 91 per cent. of cases. In cerebrospinal syphilis we obtained 75 per cent. excellent and good results. In tabetic patients we obtained 48 per cent. excellent results, while 5 per cent. obtained good symptomatic results. In 39 per cent. of cases of vascular neurosyphilis we obtained what appeared to be excellent and good results. There is an element of unpredictable damage in these cases which reduces the ultimate result. In our group of resistant general paralytic patients we got no excellent or good results, and only a small proportion of fair results. We heartily agree with Dr. Moore that if the patient can get through the first ten injections without eye complications he will not be likely to have trouble. In 5 per cent. there were objective changes. Only one patient, if I remember rightly, sustained permanent damage and we had no case of total blindness. Three patients recovered completely so far as objective eye symptoms were concerned, and one patient who sustained temporary impairment ultimately had better vision after tryparsamide therapy than before. I would emphasize that an ophthalmologist must test the eyes. There should be perimeter tests of the fields, not merely rough tests. Certain social aspects should not be forgotten. The Herxheimer reaction may occur in patients with mild elation, grandiose ideas or mild depression. In tabes in general, tryparsamide has not been of much help to us. In gastric crises, however, we have had six patients who absolutely resisted everything we knew how to do, five of whom have been at least temporarily benefited by tryparsamide. Meningeal relapses take place under tryparsamide as under older forms of treatment. We cannot expect to be miracle workers. I think that time is a most important factor. As one compares the results of various observers, one feels that the longer the drug is used the better the results will be. The simplicity of the treatment is a godsend. In fact, it is the salvation of quite a few patients who have exhausted every resource in the effort to get well. Disappointment seemed inevitable at first, but at the end of eighteen months we find our results encouraging. I still regard the use of tryparsamide as a last resort. The older methods of treatment should be tried first. Because of possible eye symptoms, many patients say they would prefer death to the acceptance of even the small risk of blindness that is involved.

DR. LEE D. CADY, St. Louis: Our experience at Barnes Hospital began about seven months ago under the direction of Dr. Sidney I. Schwab. We began using mercury and tryparsamide, and after a series of about fifty cases had been started we began using neo-arsphenamin, mercury and tryparsamide concurrently. All of our twenty-eight patients with general paralysis and taboparalysis except one have improved serologically. That patient had what Dr. Stokes calls the Herxheimer reaction, and in addition marked visual impairment. Many of these patients have so far improved that they have been able to leave the institutions to which they have been confined or to return to work. Twenty-eight and six tenths per cent. of these patients with general paralysis and taboparalysis complain of visual disturbances. However, we have been able to find signs of eye involvement in only about 7 per cent. We have thirty tabetic patients, all of whom have had varying degrees of serologic improvement. All the cell counts have decreased. This also has occurred in all other cases. The globulin contents have usually been reduced. The colloidal gold curves varied, many of them markedly. Twenty-three per cent. of these tabetic patients had some eye symptoms, varying from dimness, blurring or scintillations to an actual impairment of visual acuity. We were unable to detect any objective findings in more than 10 per cent. of these cases. In the cerebrospinal syphilis group are twenty-six cases, all except one having improved serologically. Twenty-six per cent. of these patients had visual symptoms, and 9 per cent. had objective findings. Of four cases of optic atrophy or optic neuritis, two cases had been vigorously treated with arsphenamin and mercury, up to the time of tryparsamide therapy, and escaped any impairment. In the two cases in which arsphenamin and mercury had not been given, the results with tryparsamide were not good. In one of these, a case of optic neuritis, the patient became absolutely blind after the second dose of tryparsamide, and remained so for twelve days. Vision returned, and the patient now has very good central vision; the visual fields are gradually enlarging, and he has been able to return to work with unimpaired efficiency. Encouraged by the lack of impairment in those cases that had been thus treated up to the time of tryparsamide therapy, we deliberately treated nine more cases in which there were optic nerve disturbances. Serologically and clinically, without considering the visual disturbances, all thirteen patients have improved. Only five of these cases have become worse. Treatment is stopped when the patient is made objectively worse. Four patients have had ear disturbances—either partial or total deafness. When treated vigorously, they had vestibular disturbance, which is almost as troublesome to them as blindness or amblyopia would be. Many of our male patients have mentioned a lessening of libido sexualis while under treatment. It is our opinion that tryparsamide, used as an adjuvant to other antisyphilitic measures, offers the maximum degree of hope to the neurosyphilitic. Excluding eye complications about 85 per cent. of our patients have improved clinically, including increase in weight, and sense of well being.

DR. A. L. SKOOG, Kansas City, Mo.: I think we will agree that the percentages of results have improved in proportion to the length of treatment. In other words, a man who has had an experience of more than one year has had better results than the man with an experience covering a few months. Unfortunately, my experience is less than a year, and, in fact, only begun, and I have but a limited number of cases from which to draw conclusions. However, I have been quite optimistic; in fact, my optimism might be rated just about with that of Dr. Moore. In the first place, in the treatment of neurosyphilis it must be remembered that a vast number of methods of treatment have been proposed during the last thirty years, and probably the greater number of these within the last ten years. Therefore it is not surprising that we are always looking for improvement, on account of some of the doubtful or poor results reported. As will be recalled, Dr. Lorenz considered that additional treatment should be used. In other words, in almost his entire group of cases he was using some form of mercury given at the same time that the tryparsamide was administered. I have started to use mercury in conjunction with and at the same time as the tryparsamide injections are given. Most of my treatments have been given weekly. I

have some cases in which I have tried to give smaller doses twice a week. All observers who have had considerable experience have warned about the eye complications that might occur or should be looked for. I have had three cases with eye complications. All of my cases have been examined by an ophthalmologist. Two of these cases were very mild, and the symptoms, purely subjective, subsided in a week or two. One case was a little more severe and I stopped the treatment and sent the patient home for a period. This man purposely deceived us a little. It was a case of early general paralysis without any grandiose ideas, an excellent case in which to begin treatment, and the patient was extremely optimistic. He purposely deceived us and did not tell us about the subjective ocular symptoms or amblyopia until after he had had trouble for at least ten days. However, later reports showed that he was not getting any worse and he will probably recover completely. Regarding eye findings, we should remember that tryparsamide belongs to the same group of arsenical products as atoxyl, and considerable has been written on the danger of optic atrophy developing following the use of this drug, and it probably is on this account that treatment with it has been discontinued. However, I believe that tryparsamide is a less toxic product than atoxyl. I have not administered tryparsamide in the presence of optic changes. It is well known that optic atrophy and other optic nerve changes occur in several forms of late syphilis. For instance, it occurs quite frequently with tabes dorsalis, with or without treatments other than tryparsamide; it sometimes occurs in general paralysis, and sometimes as a primary optic atrophy.

DR. CHARLES F. READ, Chicago: We have had about thirty-three patients under treatment with tryparsamide, and of these about twenty have received two or three courses of eight doses each. The cell and globulin content in these cases was reduced about the same by tryparsamide and sulpharsphenamin. The Nonne test also was affected about equally by the two treatments. Of the original group, twelve patients have just completed the third course, and of these four are in complete remission and seven in very fair condition. The latter are very interesting cases because we have had the patients tested by a psychologist and have found their mentality apparently good. Their fund of general information also is good, but they do not seem to have the "pep," the initiative, that they should have. We feel that they ought to go out and earn a fair living, but we cannot quite trust them. One of them has a well marked dementia praecox reaction though intellectually in good shape. Nine were dropped on account of suggestive fundus findings. In three cases these findings were very positive. One I hesitate to report, because we were in error in giving the patient a treatment before he was examined by an ophthalmologist. After this one treatment it was noticed that he was blind, and the disk was found to be completely atrophied, an impossible condition, I believe, as the result of one treatment with tryparsamide. However, I am glad to say that his vision has returned to a sufficient degree to enable him to get about. We have been disappointed to find that tryparsamide is not going to restore 50 per cent. of our institutional patients with general paralysis, but, on the other hand, we have secured great improvement, even to complete remission, in some of the more acutely disturbed patients. On the whole, our findings have closely paralleled those reported by Dr. Solomon and by Dr. Wile. We have procured physical health and a few remissions, and have prevented further deterioration in all but a few moribund patients. In no case have we secured a spinal fluid Wassermann reaction negative to 1 c.c.

DR. CLARENCE A. NEYMANN, Chicago: During the past year, Dr. Singleton and I have treated about thirty patients. Fifteen have not received sufficient treatment to allow us to draw any conclusions. Of the fifteen that have received at least twenty-four treatments each, eleven are clinically very much improved; four are either not improved or are worse. The most striking factor is that the serologic findings in these cases are quite different from those of a group treated by Dr. Brush and myself by means of the Swift-Ellis and allied methods. We have not obtained a negative serologic result in any of the eleven improved cases. Some show reductions in cell count; some changes in the colloidal gold curve; and sometimes the Wassermann reaction has been reduced to negative or to a doubtful negative. But in not a single one of these cases has the spinal fluid become absolutely negative. On the other hand, of the cases treated with intraspinal therapy, some 50 per cent. became negative after about a year of intensive treatment. However, the general clinical results of the tryparsamide group seem to be a little more encouraging than the results of the Baltimore group. Of the twenty-five cases treated in Johns Hopkins Hospital with intraspinal and intravenous injections, six showed a very striking clinical improvement, and of the fifteen cases treated here, eleven showed an analogous improvement. I believe that the type of case we have been treating is quite different from the type that has been treated by Dr. Read and Dr. Solomon. Our patients are all veterans of the war—young, and in the early stages of general paralysis. The few cases in the later stages, with definite outspoken symptoms, have not shown very much improvement; in fact, we feel that here our efforts were very much in vain. I agree with Dr. Moore that the blood Wassermann reaction usually remains unchanged after treatment with tryparsamide. In one case, a previously negative blood Wassermann became positive during treatment. The patients who showed the greatest improvement were those that had been treated with other arsenicals previous to being treated with tryparsamide. We have observed definite retinal changes in three cases. All of these were of the taboparalytic type. Perhaps the natural progress of the disease might account for these findings.

DR. JULIUS GRINKER, Chicago: First of all, I should explain why Chicago is not represented in this symposium, with the exception of the small amount of material studied only during the last few months. This is the reason: The "Wisconsin" group, having had a practical monopoly of tryparsamide in the West, have seen fit to ally themselves with an unethical institution in Chicago which has prevented us from using this drug in an experimental way. That explains the paucity of reports from the great medical institutions of Chicago. What little I have seen of tryparsamide effects has not impressed me favorably. Through the courtesy of Dr. Read, I was shown some of his cases, and my limited observation has taught me that there is too much visual disturbance from tryparsamide, and that I should not venture to use the drug on private patients. I understand that tryparsamide will be released soon, and I am sorry the experimental work could not be carried on for a longer period, because of the cases of optic atrophy that are bound to occur. Since I have nothing of my own to offer on the use of tryparsamide, I wish to state that, after listening to everything that has been said on this subject, I am still a firm believer in the Swift-Ellis treatment. I have used it for several years and have had favorable results. I shall not run after a new drug when I have at my disposal a method which, to say the least, does not produce optic atrophy. I believe that most of those who have used the Swift-Ellis treatment have had very satisfactory results with it. We have improved patients who do efficient work; the majority of these are in better condition than the patients whose cases are set forth in the most optimistic reports on tryparsamide as presented by the most optimistic reporters. The Swift-Ellis method is still the best remedy at our disposal in the treatment of parenchymatous neurosyphilis. Those of us who have not used it were not afraid of it because it did not bring results, but because of the work involved in employing it. The method, however, may be so simplified that five minutes' instruction will suffice to learn its use with ease.

DR. FRANKLIN G. EBAUGH, Philadelphia: I really have nothing to add, except to answer the question concerning the release of this drug. It may be wise, if such action is warranted by numerous expressions such as we have had concerning this treatment during the past year. I have received ten or fifteen requests for tryparsamide. In answer to all these requests I have asked that the applicants communicate with the Rockefeller Foundation. On studying these requests and making an analysis of the types of syphilis the physicians making them wished to treat, it was rather inter-

esting to note that the majority of them concerned a secondary syphilis or an early tertiary condition, and in a few cases an outside man had contemplated the use of tryparsamide in ordinary syphilis. Of course, the drug would do a great deal of harm in a case of early syphilis. Its use should be absolutely confined to cases of neurosyphilis.

DR. WALTER I. LILLIE, Rochester, Minn.: I have been unable to find in the literature any report of a true toxic effect on the visual mechanism produced by any of the arsenical compounds. We all know that the drugs that have a direct toxic effect on the visual mechanism produce a retrobulbar neuritis, manifested by a rapid loss of the central vision due to a definite central scotoma. The simple optic atrophy that may develop does not appear early, but may come later. The ocular changes found during treatment with tryparsamide have been rather constant. All cases reported by the different authors show a reduction of the visual acidity with a peripheral shrinking of the visual fields. A central scotoma has never been reported. This type of a change without a central scotoma is not the usual picture of a toxic drug effect on the visual mechanism. Just what effect tryparsamide has, I do not know; but all the changes in the vision and perimetric fields reported to be due to tryparsamide have been found frequently in untreated neurosyphilis. Perhaps tryparsamide activates a latent syphilitic process already involving the visual mechanism. We do know, as shown by Dr. Moore, that all the "untoward effects" develop early in the course of the treatment. In his cases, 10 per cent. had subjective symptoms, while only 5 per cent. had objective findings. In my cases 8 per cent. had subjective symptoms, while only 4 per cent. had objective findings. With arsphenamin treatment, 5 per cent. of my cases had objective findings, but none had subjective complaints. Therefore, I would place the greater part of the blame on the infection and not on the treatment.

DR. JOSEPH EARLE MOORE, Baltimore: The material presented by Dr. Solomon and by a number of the discussers points clearly to the fact that tryparsamide seems to do more for those patients in whom it is used in combination with other forms of treatment. In our presentation of material from Baltimore, we have laid some stress on this point, but not as much as I think might be. I am sure that the best way to use tryparsamide has not yet been developed; that there are some cases that cannot be benefited by tryparsamide or any other form of treatment. In others, tryparsamide will accomplish more than other methods of treatment, and in still others the reverse will be true. I disagree with Dr. Lillie on the question of central scotoma as an evidence of toxic damage from tryparsamide. There is no doubt in the minds of most observers that atoxyl produces blindness, and the percentage of patients who become blind from this cause is extremely high. No one has reported a central scotoma in patients who develop optic atrophy from the use of atoxyl. I think there can be no doubt that the ocular complications which have been observed in many of the series reported are due to tryparsamide and not to the disease. It is quite true that patients with preexisting ocular damage may in some instances grow worse as a result of tryparsamide more rapidly than if left alone, but this situation also prevails with respect to arsphenamin. In regard to releasing tryparsamide, I think the situation is extremely difficult to decide. From the standpoint of syphilis, leaving out the question of trypanosomiasis, I should be opposed to releasing the drug at the present time. I think we have not as yet had enough experience either with the best method of using the drug or with the best method of preventing serious damage to the eye from its use. Therefore, it would seem to me to be unwise to put it on the market for general use in syphilis. I agree that, once it is put out, it will be tried in every form of syphilitic infection despite repeated warnings. At the same time, it is only fair to the Rockefeller Institute to say that the trypanosomiasis situation is such a complicated matter that the balance is a very difficult one to determine.

DR. HARRY C. SOLOMON, Boston: We psychiatrists are a funny group. Dr. Read, who, like myself, is a psychiatrist, is apparently much more skeptical about the results obtained from the use of tryparsamide in general paralysis than are some of the men who deal more extensively with extra-institutional types of neurosyphilis. Explain this as you will. I am not ready to admit or to believe that one can say that a seemingly early case is to be more satisfactorily handled by drug treatment than is one that seems of much longer duration. Anybody who has followed general paralysis for any period of time I think will agree that the patients who come to a hospital with very recent symptoms and apparently in the best of physical condition are not infrequently very much more rapid in their demise than are those in whom the disease is of much longer duration but progresses more slowly. In our experience, patients who were apparently demented have reacted at times very well to treatment and have made very good remissions, whereas cases that we believed to be very early general paralysis have shown no improvement at all. Further, if one tries to relate the histopathology with the clinical symptoms, one is struck at once with the fact that there is no correlation; apparently demented patients may have very few histologic changes in the brain, and some patients that seem to be very little deteriorated have markedly atrophic brains. So I do not believe that the entire explanation of the difference in results reported is that one group of investigators has dealt with early cases and another group with late cases. Let us remember that it is often possible ot rehabilitate patients with general paralysis for a number of months. There are many in state hospitals who could be back at work, but they are general paralytics, and a frequent attitude of the staff is that they cannot get better. They therefore remain in the hospital until they justify this opinion by their ultimate decline. A no more definite improvement in a treated case may be viewed as a striking therapeutic success, and the patient reinstated in the community. Tryparsamide, despite all that has been said about its inefficiency, is of value. It has a place in the treatment of syphilitic diseases of the nervous system; it is an addition to the Swift-Ellis method and other treatments, which were tremendous advances over what we had before. It takes its place with arsphenamin and subarachnoid therapy, and is an important addition. Some patients are going to be harmed by tryparsamide, as others have been harmed by arsphenamin. Practitioners who are going to use it injudiciously will use it injudiciously despite anything that is said or written, whether it is withheld for a year or put on the market now. By putting this drug into the hands of people who do not know how to use it, we are going to learn more about how it should be used than in any other way. Having used it now for eleven months and heard the reports of others, it seems certain that we shall get at the most, 1 per cent. of amblyopia of marked degree, and many of the patients who will develop amblyopia are patients who, untreated, would have but a brief life, institutionalized and incapacitated.

Congenital Enlargement of the Colon.—At a recent meeting of the Medical Society of the Hospitals of Paris, Drs. Berge, Chevrier, and Lefevre demonstrated post mortem a case of congenital enlargement of the colon in a boy of 15. The patient had suffered from constipation since birth, and had often felt no call to stool for periods of a week or even a month at a time. He was operated on for an attack of intestinal obstruction, and died a few days later. At the necropsy it was found that not only the abdomen but the thorax also was completely filled by two loops of the colon, one of which was distended to an enormous extent. At first sight it seemed as though the thoraco-abdominal cavity, from clavicles to pubis, contained nothing but these two enormous loops of colon, but closer examination revealed a narrow space, about 2 inches in depth, in the upper part of the thorax, into which the heart, the lungs, and the liver were compressed. The spleen alone retained approximately its normal position. The loop of distended colon measured 50 cm. in length, 27 cm. in breadth, and 54 cm. in circumference. The retained fecal matter weighed almost 14 kg., and the loop contained much gas. "This weight and these dimensions," says a French correspondent, "justify the publication of this case and diagram."—*Lancet* **2**:230 (Aug. 2) 1924.

THE ENDOMETRIUM OF THE MENSTRUATING UTERUS *

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The investigations of Hitschmann and Adler,[1] which have been confirmed in all essential respects by subsequent workers, have established quite definitely the histologic changes occurring in the endometrium at various phases of the menstrual cycle. There is little or no difference of opinion at the present day concerning the histologic characteristics of the postmenstrual, the interval, and the premenstrual stages. With reference to the menstrual phase, i. e., the phase of actual menstrual bleeding, opinion is not nearly so unanimous. Knowing the picture just before the onset of the period as well as that found just after its close, one might logically assume that the chief feature of the menstrual phase is a transition from the premenstrual high point of development to the low point so characteristic of the postmenstrual phase. Since both the premenstrual and the postmenstrual stages are characterized by an intact endometrial surface, one might further suppose that the transition from one to the other is accomplished by a simple involution or shrinkage, without actual loss of tissue. It is with this question of whether or not an important part of the endometrium is lost at menstruation that this paper is chiefly concerned, although we have also included in the study a consideration of other interesting features of the menstrual process, such as the circulatory changes, the changes in the glands and stroma, the infiltrative processes, and the method of regeneration of the endometrium after the flow.

When one considers its importance, one is struck with the rather remarkable paucity of trustworthy investigations of this subject. This is probably to be explained by the fact that surgeons have commonly felt a hesitancy about operating during the menstrual period. Even now, it is safe to say that practically all surgeons avoid the menstrual periods in selecting the time of operation for their patients. And yet, so far as we know, there is no evidence to indicate that abdominal operations during the menstrual period are attended with greater risk than those performed at any other time. This fact is impressed on every surgeon in the case of imperative operations performed on menstruating women. In spite of this, it is probably true that the traditional aversion of both surgeon and patient to operations during menstruation will continue to influence the time selected for elective operations. Certainly, no one can object to this attitude on the basis of the patient's welfare, the prime consideration in all surgery. In all large clinics, however, it frequently happens that patients begin to menstruate just before or just after admission, and we see no reason, in such cases, why operative procedures should be delayed, perhaps for a good many days.

The aversion to operating on the menstruating patient is probably a survival of the belief that the menstrual period is a process by which the woman's system rids itself periodically of impurities of one form or another. Our modern conception of the menstrual phenomenon is altogether different. The premenstrual hypertrophic changes in the endometrium unquestionably represent a preparation for a possible impregnated ovum. If fertilization of the ovum occurs, these changes pass on by easy stages into those of the early decidua. If fertilization does not occur, the ovum dies, and the preparation in the endometrium goes for naught. It breaks down, with the occurrence of hemorrhage, and it is this catabolic process which constitutes menstruation. There is much truth, therefore, in the dictum that "women menstruate because they do not conceive." The fact that certain secretions of the menstruating woman exert an injurious effect on the growth of flowers and plants, as Schick [2] and others have apparently shown recently, is not in any way incompatible with this view.

MATERIAL

The present study is based chiefly on a series of twelve recent cases in which the uterus was removed at some time during menstruation. The indication for hysterectomy in all these cases was either pelvic inflammatory disease or myoma. Most frequently, the two lesions were combined. In all the cases of the series, the menstrual rhythm was perfectly normal, and the menstrual dates were carefully checked. In many of these cases, the exact hour of menstrual onset was determinable objectively, as the flow made its appearance after the patient's admission to the hospital.

Four women were operated on the first day of the period; i. e., within twenty-four hours of its onset. Five operations were done on the second day, two on the third, and one on the fourth. In addition to these, three uteri were removed immediately before the onset of the period; in these cases, menstruation was due at the time, but external bleeding had not yet been observed. A considerable number of uteri have been studied from patients operated on very soon after the close of the period, while a background for the study has been furnished by many hundreds of sections from uteri removed at all intermediate stages between menstrual periods.

In all our cases, great care was taken to avoid injuring the endometrium during the operation. Traction sutures of catgut were usually employed in preference to vulsella or elevating forceps. Immediately after removal, the uterus was opened and placed in Zenker's fluid, so that in practically all our cases the fixation was begun within two or three minutes after the removal of the uterus. These precautions, we feel, give our material an unimpeachability not possessesd by that forming the basis of many previous studies.

CHANGES IN THE ENDOMETRIUM

The Nonmenstruating Endometrium.—On most points, there is now little difference of opinion as to the changes occurring in the endometrium at various phases of the menstrual cycle. For example, the characteristics of the postmenstrual picture are universally recognized, especially in regard to the straight, narrow, collapsed glands. Somewhat later in the cycle, these glands become larger and gradually assume a moderate degree of tortuosity. In this, the interval stage, as in

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* Because of lack of space, this article is abbreviated in THE JOURNAL. The complete article appears in the Transactions of the Section and in the author's reprints. A copy of the latter will be sent by the author on receipt of a stamped addressed envelop.

1. Hitschmann and Adler: Der Bau der Uterus-schleimhaut des Geschlechtsreifen Weibes mit besonderer Berücksichtigung der Menstruation, Monatschr. f. Geburtsh. u. Gynäk. 27: 1, 1908.

2. Schick, B.: Das Menstruationsgift, Wien klin. Wchnschr. 33: 395 (May 6) 1920.

the postmenstrual, the epithelium is of a distinctly nonsecretory type, while the stroma is quite dense and compact.

With the beginning of the premenstrual phase, there is a rather sharp flare-up in the activity of the mucosa. Then, the epithelium takes on distinctly secretory characteristics (secretory phase). It is low and frayed in appearance, and the lumen border of the cells appears to melt away in a mucoid secretion. This applies more particularly to the glandular epithelium, while that on the surface often remains rather high and intact. The glands become very tortuous, so that on longitudinal section they are rather dentate in appearance, while on cross section they are very irregular and scalloped. In other words, they suggest very much the glands of early pregnancy ("pregnancy glands" of Gebhard-Opitz), so that this stage is often referred to as the pregravid. In addition to these gland features, the pregravid idea is further borne out by the stromal changes, for the stroma cells of the compact layer not infrequently undergo a decidua-like hypertrophy.

Changes Immediately Before the Onset of Menstrual Bleeding.—The changes just mentioned begin several days, sometimes as much as a week, before the onset of bleeding. Toward the very end of the premenstrual period, i. e., just before the beginning of bleeding, certain other changes are added. It is obviously difficult to be sure when menstrual bleeding has begun from the endometrium, for a certain space of time must elapse before the menstrual blood makes its appearance externally. The degree of discrepancy between anatomic and clinical menstruation unquestionably differs in different women. It would probably be rather slight in the case of the woman who menstruates freely, and who is up and about at this time. On the other hand, it is conceivable that several hours might be required for the external appearance of blood when menstruation is very scanty, and when it begins while the woman is lying down. In spite of the uncertainty as to the actual time of the onset of endometrial bleeding, one occasionally sees an endometrium which lacks the characteristics of the bleeding phase, and which, on the other hand, presents certain changes not noted in the premenstrual picture, as it has been previously described.

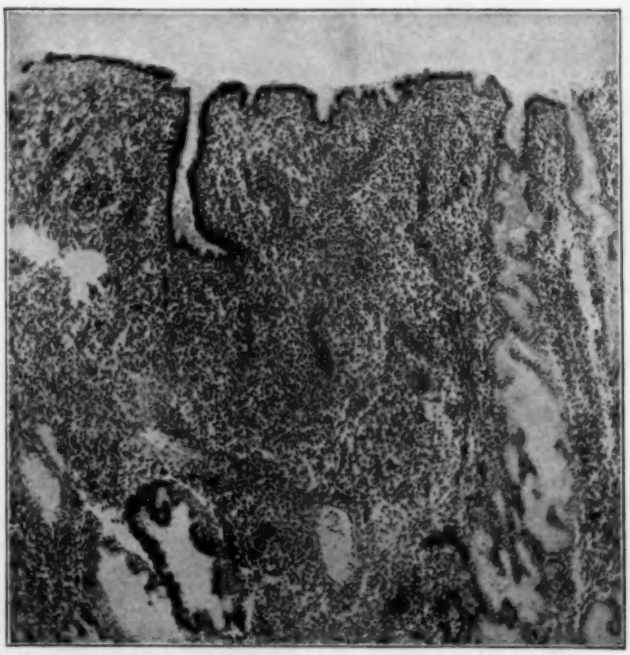

Fig. 1.—Endometrium just before menstruation, taken from a patient about to menstruate, but not yet bleeding at time of operation. The dilated tortuous glands, the intact surface epithelium and the marked infiltration of the lymphocytes and polymorphonuclears may be seen.

In our material, there are included three cases in which operation was performed at a time when menstruation was due. In all these, the function was perfectly regular, and the accuracy of the dates verified, so that there could be little doubt that the period was impending. In none of these cases, however, had there been any external bleeding. The histologic pictures presented in these three cases were strikingly similar, and may be considered characteristic of this phase of the menstrual cycle. As far as architecture, cell type, and gland pattern are concerned, it is true that the picture is essentially that already described as premenstrual. The surface epithelium is of a moderately high, columnar type, while that of the glands is low, fuzzy, and distinctly secretory. There is no pyknosis, and no mitoses are seen. The characteristic disposal of the endometrium in three layers is noted—the compacta, the spongiosa, and the basalis.

By far the most striking feature, however, and the one which chiefly distinguishes this short phase from the remainder of the premenstrual phase, is the remarkable infiltration of the stroma with lymphocytes and polymorphonuclear leukocytes. It is true, of course, that a sporadic infiltration with such elements is observed for several days before the beginning of menstruation. This, however, is in no way comparable to the massive infiltration noted in all three of the cases in the group we are now describing. The failure to make note of this extreme infiltration in the ordinary premenstrual endometrium leads us to believe that it is of rather rapid development, so that, in its fullest form, it is perhaps to be observed for only a few hours before the beginning of the flow. On the other hand, one cannot deny that, in such cases as the three now under discussion, the menstrual process may be already under way, even though no clinical manifestation had been observed. This point can be determined only by the study of a far larger number of cases than is now available.

The adventitious elements observed in this "infiltrative stage," as it may be called, are of various types. Large numbers of polymorphonuclear leukocytes are seen in the compacta and spongiosa, and a smaller number in the basalis. Some of these are well preserved; others are dead or degenerating. Lymphocytes are also present in large numbers, their distribution being somewhat more uniform, so that in this respect the basalis is often quite as much involved as the functioning layers.

Not infrequently, the lymphocytes are collected in little nodular aggregations which somewhat resemble the lymph follicles found in many normal endometriums.

It seems unwise, in the present stage of our knowledge, to speculate as to the purpose or significance of this premenstrual infiltration. As Heape has said in describing the analogous process in monkeys, we have here all the accompaniments of an active inflammation, and yet an inflammatory process does not exist. We can only say that the presence of this great number of infiltrating elements is apparently invoked by the degenerative—possibly autolytic—processes about to occur in the endometrium. Even in the infiltrative stage, the

upper layers exhibit an impaired staining reaction, suggesting their impending dissolution.

Strange though it may seem, circulatory changes have not been conspicuous in this stage. A moderate number of thin-walled blood vessels are seen in all three layers of the endometrium. There is little evidence, however, of unusual dilatation or congestion, and no indication of rhexis.

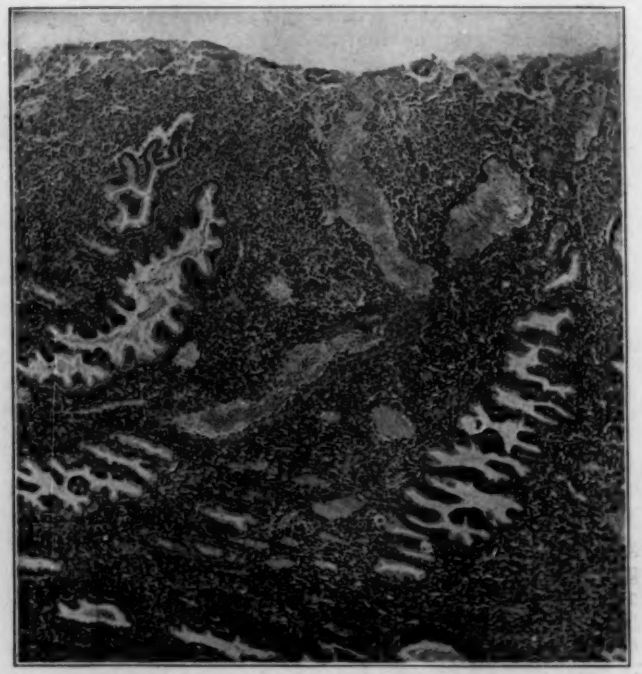

Fig. 2.—Endometrium on the first day of menstruation, showing the compacta, spongiosa, and part of the basalis. The greatly dilated blood vessels, some of which are opening directly on the surface (rhexis), are especially prominent. There is a marked infiltration, especially of the compacta, the upper portion of which is being cast off in small particles. There are considerable individual differences in the degree of this endometrial loss on the first day.

Finally, it may be said that, in all the cases of this group, the surface of the mucosa was absolutely intact; i. e., there was no loss of tissue. On the other hand, as has already been stated, the poor staining and loss of outline of both epithelial and stromal cells in the upper layers suggested that their vitality had been profoundly impaired, and that they would soon be cast off.

The First Day of Menstruation.—Four of our cases occurred within the first twenty-four hours of the menstrual flow. Here again, there was a striking similarity in the general picture, so that the cases may be described collectively. Grossly, the mucosa presented a reddish, somewhat granular appearance, and in some cases, tiny areas of denudation might be observed with the naked eye. The thickness of the mucosa in our cases was usually from 2 to 4 mm., so that it may be assumed that a considerable shrinkage of the endometrium occurred within a short time after the beginning of the flow.

Loss of tissue is not a striking feature on the first day of the flow, but it is practically always observed in some degree. The surface epithelium is present over a considerable extent, but absent in many places. Even where it is intact, it is apt to give the impression of impending desquamation. One frequently sees long strips of surface epithelium, with adherent ribbons of the underlying stroma, lifted off from the surface. Aside from this, the compacta is usually still preserved, although frequently it shows disruption in places. In one of our cases, there was a complete loss of the compacta and even a partial loss of spongiosa, so that it seems certain that individual variations occur, and that extensive loss of tissue may be noted even on the first day of the flow.

From what has been said, it is evident that loss of tissue at the time of menstruation does not usually occur in the form of a massive slough. Much more characteristically, it appears to be a crumbling, necrotic process. The designation of "sequestration," which was applied to the process many years ago by Aveling, is not inappropriate.

There is considerable difference between the surface epithelium and that of the glands, as regards their response to the degenerative influences of the menstrual process. The former retains its moderately columnar type, and shows no great degree of nuclear degeneration. Pyknosis is not observed there, in striking contrast with the epithelium of the glands. Every one of our cases showed the presence of pyknosis, at times to a most striking degree, in the epithelium of the glands. Schröder, Büttner[20] and others have emphasized the constancy of this change at the beginning of menstruation, and we are convinced that their observation is correct. The pyknotic granules are often very numerous. They have a strong tendency to migrate toward the basement membrane, and at times appear to pass out into the stroma.

As a rule, the pyknosis is most striking and most constant in the functioning layers, but it is commonly found also, though to a lesser degree, in the basalis. In two of our four cases, a slight degree of pyknosis was observed in the stroma.

We were unable to find mitotic figures in any of our sections at this phase. This is not surprising, as the dominant process at this stage is one of degeneration, and regenerative processes have not yet begun to manifest themselves.

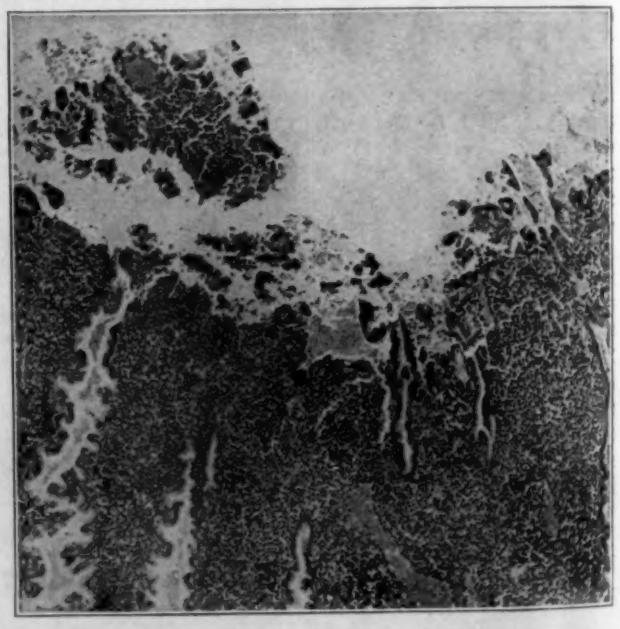

Fig. 3.—Section of another portion of the surface of the endometrium of the uterus shown in Figure 2 illustrating the crumbling away of the compacta and the marked cellular infiltration (slightly higher power).

20. Büttner: Anatomische und klinische Untersuchungen über die Endometritis, Arch. f. Gynäk. **92**: 781, 1910.

The infiltration noted in the preceding stage abates somewhat with the establishment of the flow, although it is still very conspicuous.

The circulatory changes of this early menstrual phase deserve especial study, because, after all, the bleeding

Fig. 4.—Endometrium (high power field) obtained on the first day of menstruation, showing marked pyknosis of the glandular epithelium.

of menstruation is at bottom a circulatory phenomenon. The blood vessels of the compacta are conspicuous by their large size, their thin walls, and their distention with blood. The same may be said of the spongiosa vessels and, to a less extent, of those of the basalis.

For many years it has been believed by many that the hemorrhage of menstruation occurs by diapedesis and not by rhexis. We are convinced, from our own studies, that rhexis plays a far more important rôle than we have believed in the past, and that it is probably the all-important factor in the production of the bleeding. The engorged, thin-walled blood channels may be traced to the very surface. When the latter is cast off, the blood channels are ruptured, discharging their contents on the uterine surface. We make no pretence of explaining the mechanism by which the degree of bleeding is regulated; but that it is due in large measure to the actual rupture of blood vessels, we feel convinced. On the other hand, it is possible that diapedesis plays a part in the process. The chief argument for this, it seems to us, is that loss of tissue and, presumably, blood vessel rupture, is not noted in the first stages of menstruation, when menstrual bleeding is already present. As already emphasized, it is hard to argue this point until more material is available. It is pertinent, however, to call attention to the fact that, even on the first day of the flow, and perhaps at its very beginning, there may have occurred a certain amount of tissue loss, perhaps enough to explain the bleeding.

The Second Day of Menstruation.—Five of the patients in our series were operated on on the second day of menstrual bleeding. In every one of these, extensive loss of tissue was noted. The surface epithelium and the compact layer were invariably absent, and there was in all of the cases a loss of at least the upper stratum of the spongiosa. The tissue thrown off is first destroyed by the peculiar degenerative process described in the preceding section. The degenerated tissue is thrown off in pieces of various size. Some are very small, consisting of perhaps only a few, granular, disintegrating cells. At times, again, there are long strips of degenerated mucosa, a considerable thickness of the compacta often being loosened with its covering epithelium.

The same fragmentary desquamation is seen with the spongy layer. By the end of the second day, it is usual to find only the deeper portions of the spongiosa left. Only the fundal stumps of the glands remain, the more superficial portions having been cast off. Beneath the pale-staining, degenerated remains of the spongiosa there are seen the more sharply staining gland lumina of the basalis. There is nothing in the appearance of either the glands or the stroma of the basal layer to make one think that it will be cast off, and, as a matter of fact, no such casting off of the basalis has been observed.

The pattern of the basal glands is, of course, quite different from that noted in the functioning layers before these are cast off. Instead of the premenstrual pattern exhibited by the latter—the large, tortuous glands, with low secretory epithelium—the basal glands of the second day are characteristically small and narrow, while the epithelium is sharply outlined, with no suggestion of secretory activity. It is low columnar in shape, without either mitosis or pyknosis.

The portions of the spongiosa still remaining show a marked degree of infiltration, as does also the basal layer. The degree of infiltration is, however, less than

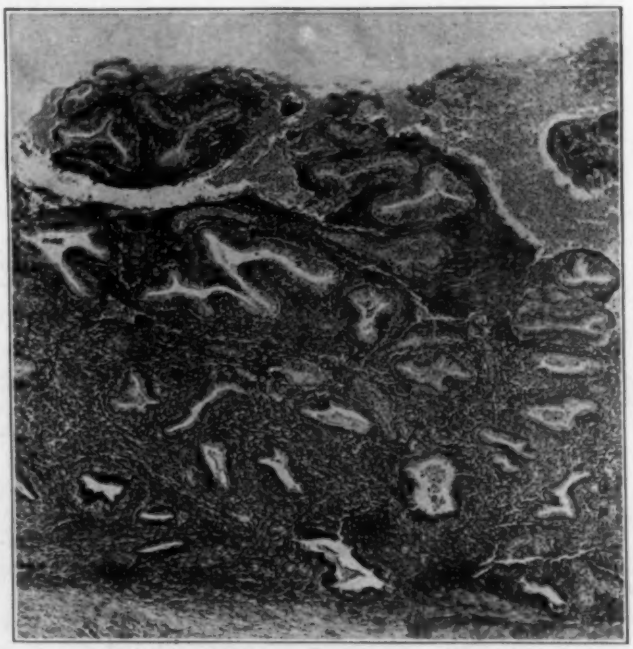

Fig. 5.—Endometrium on second day of menstruation, showing the basalis with only a small part of the spongiosa intact. The compacta and the greater part of the spongiosa have been cast off.

in the early stages. Lymphocytes are the predominant cells, although the spongiosal remnant shows a moderate number of polymorphonuclear leukocytes as well.

The blood vessel changes are similar to those already described for the earlier stages. The superficial vessels

have, of course, been lost with the compacta. The vessels remaining in the spongiosa show much dilatation, and their walls are very thin. Actual rupture of these vessels on the denuded surface can be demontrated, so that there can be no doubt as to the importance of rhexis in the production of the menstrual hemorrhage. The blood vessels are much less conspicuous than those of the upper layers. Their walls are also quite thin, but they show only a slight dilatation.

Third and Later Days of Menstrual Bleeding.—Two uteri of our series were removed on the third day of bleeding, and one on the fourth. In a general way, it may be said that the most conspicuous feature of the third day is the beginning of definite efforts at regeneration of the endometrium. The entire mucosa, with the exception of the basalis, has been thrown off, although degenerated portions of spongiosa are still to be seen here and there. The poorly staining epithelium of the spongiosal portions of the glands presents a sharp contrast to the clearly outlined, sharply staining epithelium of the basal portions. There can be no doubt that it is the latter which plays the most important part in the restoration of the surface epithelium. The stumps of uterine glands form many U-shaped depressions on the denuded surface. The epithelium of these depressions is soon continued over the interglandular areas of the surface. This merging of the epithelial coverings of the glands quickly covers the surface, so that, even on the third day, long stretches of intact surface epithelium may be seen. This stage Schröder speaks of as the "status post desquamationem et regenerationis."

Fig. 6.—Blood clot obtained from the cavity of the menstruating uterus whose endometrium is shown in Figure 5. Cast-off particles of the upper two layers of the endometrium are seen, including not only surface epithelium, but also considerable stroma and numerous glands.

The rapidity of this epithelization is, indeed, one of the most striking aspects of the entire problem. At times it appears to be accelerated by the configuration of the gland lumina. For example, not infrequently a long narrow gland will be seen extending parallel with the surface. The loss of the one wall of the gland will leave the long, epithelial, deeper wall of the gland to help form the new surface epithelium.

In spite of the rapid regeneration of the epithelium, one is struck by the absence of mitoses. This is difficult to explain. It was this fact, especially, which led Heape to the assumption that the new surface epithelium may be formed by the metaplasia of the upper stratum of stroma cells, as has already been mentioned. It may be recalled, also, that Westphalen believed that restoration was accomplished, in part at least, by the reimplantation on the surface of the portions of tissue that had been lifted away in the early stages. For such a view, there is no evidence whatever.

Pyknotic changes are still prominent in the degenerated spongiosa remains. The infiltration, so prominent in earlier stages, has in large measure disappeared, although a slight amount is still present in the basalis. The blood vessels of the latter still show some dilatation, and evidences of rhexis are to be seen here and there.

The Endometrium Just After the Cessation of Bleeding.—Attention has already been called to the rapidity with which epithelization proceeds. The examination of uteri removed immediately after the menstrual period invariably reveals a complete surface layer, with the usual characteristics of the postmenstrual epoch—the straight, narrow glands, the low, cuboidal epithelium, and the compact stroma. Whereas mitosis is never observed during menstruation, it becomes very pronounced just after the flow. Why this should be so, we cannot say, as the surface is now complete, and the further development of the endometrium rather slow and gradual until the advent of the next secretory phase.

Nevertheless, mitotic figures are richly distributed in the gland epithelium, although they are absent in the surface layer. The stroma likewise exhibits rather frequent mitoses. We have found evidence of mitotic activity very marked as early as two days after the cessation of the bleeding, but it has been present, also quite markedly, in other cases on the fourth or fifth day after bleeding. According to Westphalen, mitosis is to be found from the eighth or ninth up to the seventeenth or eighteenth days of the cycle. As already stated, however, we have found it immediately on the cessation of the period, and other investigators have made a similar observation.

Microscopic Study of the Menstrual Discharge.—As a supplement to the histologic studies already given in detail, we have recently made a study of the menstrual discharge in a few cases, in an effort to ascertain whether or not particles of cast-off endometrium may be found in it. In a small series of cases, the menstrual discharge was obtained by directing women in the outpatient clinic to place their napkins at once into a vessel of formaldehyd solution with which they were provided. We may say that this method proved disappointing, chiefly because any bits of granular mucosa cast off from the uterus were apparently autolyzed or otherwise destroyed during the possibly long interval before fixation, so that microscopic study showed very few tissue elements.

The results were quite different in the few cases in which the menstrual blood, sometimes clotted, was taken directly from the uterine cavity of those patients on whom hysterectomy had been done. Incidentally, we may state that this is not always possible, because the uterus is often found quite clear of blood even during

active menstruation, thus illustrating the excellent natural drainage of the uterine cavity. Figure 6, however, shows clearly the presence in the menstrual blood of long strips of surface epithelium, as well as of portions of gland tissue from the compacta. In other words, we may say that, to all intents and purposes, we were able to find in the menstrual discharge the portions of mucosa which a study of the uterus had shown to be lost during menstruation. These findings impress us as offering strong confirmatory evidence of our views as to the menstrual loss of endometrium.

Somewhat similar studies have been made by other investigators. Von der Leyen[21] found portions of tissue varying from individual cells to bits of 1 cm. size, often with glands. She concludes that such loss is physiologic. Lindner,[22] in the study of thirty-three cases, reached similar conclusions. Most of her patients were young virgins, whose menstrual napkins were carefully investigated for bits of tissue. In fifteen cases in which abortion could be definitely excluded, small, firm portions of tissue, even up to 4 cm. in diameter, were found. It is of interest to note, as confirming our own studies on the uterine wall, that all these portions of tissue were recovered on the first two days of the flow. Particles found later on were so degenerated that no structure could be seen. Sekiba's[23] very recent work along the same lines adds further confirmation to the studies already cited. In a series of fifteen patients, two showed large shreds of tissue, one on the first and one on the second day. In six other case, portions of fairly large size were passed, while in the remainder very little or none was found.

SUMMARY

While there is little difference of opinion at present concerning the uterine changes in the postmenstrual, interval and premenstrual phases, there has been much discussion for the last fifty years concerning the behavior of the endometrium during actual menstruation. The chief point at issue has been as to whether or not all or a part of the uterine mucosa is cast off. The paucity of reliable investigations on this point has been due in large measure to the aversion of surgeons toward operating on menstruating women.

Our material consisted of twelve uteri removed during some phase of actual menstruation, together with a number removed immediately before or just after menstruation. The study of this material, which we believe has been studied by methods eliminating errors of technic, convinces us that extensive loss of tissue is the rule during menstruation, as Schröder has demonstrated. The entire superficial or compact layer, as well as most of the deeper or spongy layer, is thrown off. It is possible that there may be exceptions to this, but we have not observed them. On the first day, the surface of the mucosa may be quite intact, but more commonly it shows beginning loss of tissue. By the second day, the throwing off has become very extensive, all the compacta and most of the spongiosa being gone. Regeneration changes are usually evident on the third day, and may be quite marked.

The desquamation of mucosa is preceded by extensive infiltration with polymorphonuclear leukocytes and lymphocytes; this infiltration is marked for a short time before the actual clinical onset of menstruation. The throwing off of the mucosa does not usually occur as an extensive shedding in large masses. It is a sort of crumbling, molecular process, small strips and bits of granular degenerated mucosa being cast off until only the basalis, and perhaps a few spongiosal remnants, are left. The desquamated endometrial portions may be recovered from the menstrual discharge, as we have shown. Pyknotic changes are prominent at the beginning of menstruation.

Regeneration is remarkably rapid, especially the epithelization of the surface. The source of the new epithelium is chiefly the epithelium of the basal stumps of the uterine glands. Strange to say, mitosis is not a very frequent occurrence, appearing to a greater extent when the epithelial layer is already complete.

While diapedesis may, perhaps, play some part in the mechanism of the menstrual bleeding, rhexis is certainly the most important factor. It can be demonstrated histologically, although its occurrence is self-evident, in view of the extensive tissue loss associated with menstruation.

Fig. 7.—Endometrium on the third day of menstruation, showing practically only the basalis left intact. The epithelization of the surface has already begun, by the outgrowth of epithelium along the surface from the remaining glands.

ABSTRACT OF DISCUSSION

PROF. GEORGE W. BARTELMEZ, Chicago: In few fields in histology is our knowledge more inadequate than in that just presented. The difference of opinion concerning what actually happens is due largely to the fact that most observers have studied only the endometrium of the first day of the flow, and have found little or no loss of epithelium. In the course of some studies that Dr. Culbertson and I are making, we have found, even on the first day, extensive areas of necrosis in the compacta. On the second day, the degeneration is always great. As Dr. Novak has said, the findings in monkeys are particularly illuminating in this respect because in these the destruction cannot be attributed to disease, trauma or the like. Furthermore, we can say confidently that there is no essential difference between the menstruation of apes and that of the human species. The problem suggested by Dr.

21. Von der Leyen: Zur normalen und pathologischen Anatomie der Menstruationsabgänge, Ztschr. f. Geburtsh. u. Gynäk. **59**: 113, 1907.
22. Lindner, K.: Histologische Untersuchungen der physiologischen Menstruationsabgänge, Monatschr. f. Geburtsh. u. Gynäk. **57**: 119 (March) 1922.
23. Sekiba: Zur Morphologie und Histologie des Menstruationszyklus, Arch. f. Gynäk. **121**: 36, 1923.

Ries is in order here; namely, the relation of ovulation and menstruation. We know from the work of Leopold and his students that menstruation may occur in the absence of ovulation. They reported at least eight crucial cases selected from an enormous clinical material. The discrediting of their work, because they misinterpreted the age of the corpus luteum, has resulted in the neglect of their proof that menstruation may occur in the absence of ovulation. We know from Corner's work that in certain monkeys a typical period may occur at the expected time and yet no corpus luteum or even a large follicle be found. I suggest that there are two kinds of menstrual periods, those preceded by ovulation and those independent of it. In the former, the endometrial hypertrophy is much greater than in the latter. The study of the latter should throw more light on the other factors concerned in menstruation. It is even possible that we may find corpora lutea which have not been activated, much as we know of perfectly normal thyroid glands which do not function because they have not been activated by the hypophysis. We may then find a mild endometrial reaction in the absence of a corpus luteum or in the presence of an inactive one. Only the finding of a maximal endometrial reaction in the absence of a corpus luteum would necessarily disprove this hypothesis. That would also disprove the causal relationship between the uterine changes and the corpus.

DR. EMIL NOVAK, Baltimore: Dr. Bartelmez has brought up the question of the relation of menstruation and ovulation. It is, of course, well known that ovulation can occur in the absence of menstruation. This is best illustrated by the fact that pregnancy frequently occurs during the amenorrhea that is so common during lactation. The same possibility exists during the "dodging period" of puberty or the menopause, as well as in the amenorrhea seen with certain endocrine conditions, such as adiposogenital dystrophy. On the other hand, I know of no evidence to indicate that menstruation in the human female can occur without a preceding ovulation; i. e., without the formation of a corpus luteum. It is true that in the case of monkeys the possibility of this has been suggested by the work of Corner and others. In women, on the other hand, the evidence is still altogether against this point of view, although it would be rash to deny its possibility in view of the fact that our knowledge of the whole subject is still obscure on so many points.

Automobile Deaths in Ohio in 1923.—According to statistics compiled by the state bureau of vital statistics for 1923, Ohio's death rate due to automobile accidents was 17.6 per hundred thousand population as against a rate of 13.8 for 1922. There were 1,078 killed in automobile accidents in Ohio in 1923, as against 833 killed in 1922, an increase of 245. This does not include 157 killed in automobile collisions with trains and interurban cars which are charged to railroad accidents. Higher mortality from automobile accidents has been a factor in increasing the general death rate of Ohio during 1923.—*Pub. Health Rep.* **39**:755 (April 11) 1924.

A CASE OF MULTIPLE CUTANEOUS LEIOMYOMA *

KENDAL P. FROST, M.D.
LOS ANGELES

Cutaneous leiomyoma is one of the great rarities of dermatologic entities. In 1907, Beatty [1] reported a case and stated that it was the twenty-seventh to be reported. Since the publication of his article, ten other cases have been reported in the available literature. Four other titles have been found, but the journals are not available; two of these may bring this total to twelve. Heidingsfeld [2] reported two cases, one probably arising in the smooth muscle cells of the vascular walls. MacLeod [3] reported a case in 1908; Fritz,[4] two cases in 1910; Engel,[5] one in 1912; Abramson,[6] one in 1913; Sequeira,[7] one in 1914, and another in 1920. Ormsby presented a case before the Chicago Dermatological Society, in 1923. This brings the total cases in the available literature to thirty-seven, or probably thirty-nine, counting the cases of Roth [8] and Dagonet,[9] and the subject of this report.

Fig. 1.—Lesions on back.

Four reports, in this period of fourteen years, are by British authors. It seems unlikely that instances of this disease are more common in England than elsewhere. Probably more cases have occurred than are reported.

Solitary subcutaneous leiomyomas are probably different in their etiology and clinical aspects, and are not considered in this review of the literature.

REPORT OF CASE

A Mexican woman, aged 28, married, came under observation in April, 1922, complaining of a painful skin condition of eight years' standing. Except for the condition then present her health had always been excellent. Both parents were living and well; her husband was well. She had had two children, one of whom was living and well; the other died in infancy. One brother and one sister were living and well; two died of acute illnesses, the nature of which was not known.

* Read before the Section on Dermatology and Syphilology at the Seventy-Fifth Annual Session of the American Medical Association, Chicago, June, 1924.

1. Beatty: A Case of Multiple Leiomyomata of the Skin, Brit. J. Dermat. **19**: 1-10 (Jan.) 1907.
2. Heidingsfeld, M. L.: Myomata Cutis, J. A. M. A. **48**: 562 (Feb. 16) 1907.
3. MacLeod: A Case of Multiple Leiomyoma, Brit. J. Dermat. **20**: 84, 1908.
4. Fritz: Zwei Faelle von multiplen Kutismyomen, Arch. f. Dermat. u. Syph. **99**: 45-49, 1910.
5. Engel: Un caso di leiomioma cutaneo multiplo, Gior. ital. d. mal. ven. **53**: 728-733, 1912.
6. Abramson, I. A.: Multiple Leiomyomas of the Skin, Russk. Vrach **12**: 1614, 1652, 1913.
7. Sequeira: Leiomyoma, Brit. J. Dermat. **26**: 331 (June) 1914.
8. Roth: Leiomyoma Multiplex Dorsi Esctes, Dermat. Urol. Sect. Roy. med. Soc. Budapest, Feb. 24, 1908.
9. Dagonet: Ueber die Entstehung der Hautmyome, Festschr. f. Hans Chiari, 1908, pp. 1-10.

The first indication of her condition was spasmodic pain in the back. At first, the attacks were mild and infrequent. They gradually and progressively became worse until the pain was excruciating, and was started by the slightest stimulation of the involved area. The appearance of the skin had changed during the same period, but the patient was rather uncertain about its development. The change first appeared in the area of the pain, and now involved a rather large area on the right lumbar region. Scattered patches had developed more recently on the right upper part of the chest and on the right arm, and were not painful. There were no abnormalities except in the skin and in the areas mentioned. Every little while, the patient seemed in great pain, putting her hand to her back and occasionally shedding tears. These paroxysms lasted two or three minutes, after which she seemed comfortable. On the back, over the lower right part of the chest and upper lumbar region, was an area about twice the size of a man's hand where the skin was thickened and slightly darker than normal. Throughout this area were small, soft masses slightly darker or unchanged in color from the surrounding skin. In addition there were scattered, discrete, hemispherical, coral pink, shiny tumors

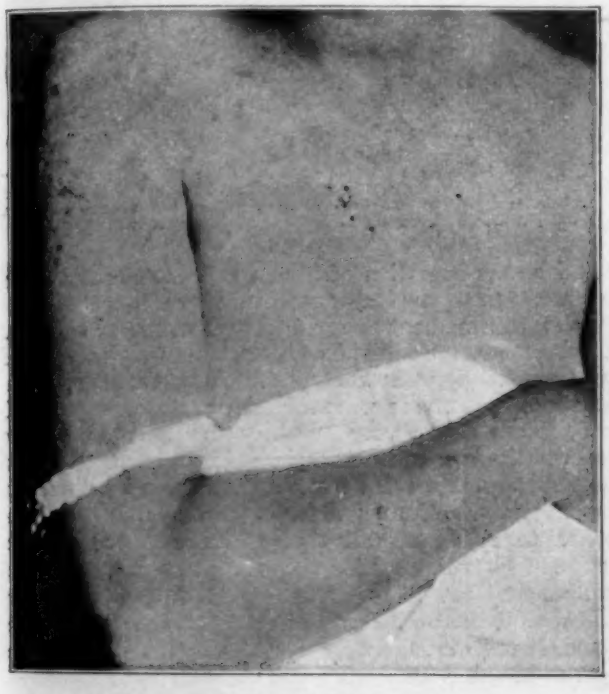

Fig. 2.—Scattered lesions on arm and chest.

about the size of small peas. Merely touching the skin near these tumors caused an attack of pain. No contractions in the tumors themselves could be seen. Over the upper right part of the chest, and the right shoulder and arm were thickened patches scattered as far as the wrist. There were no small, pink nodules in these areas.

A biopsy was performed, April 28, 1922, one of the pink tumors being removed. Microscopically, the tumor was composed of bundles of smooth muscle cells cut in different directions, showing that they interlaced throughout the mass. Between the bundles of muscle cells were bundles of collagen fibers, which passed out at the periphery into the corium and subcutaneous tissue without the formation of a definite capsule. There were no glands to be seen in the section. At one side of the tumor was a hair follicle.

The diagnosis was multiple cutaneous leiomyoma.

On account of the diffuse nature of the process, excision was not practical. On several occasions, the patient was given one-half skin unit of unfiltered roentgen ray, which seemed to ameliorate the pain. Irradiations with the Alpine sun lamp unquestionably increased the pain.

ABSTRACT OF DISCUSSION

DR. OTTO H. FOERSTER, Milwaukee: Cutaneous leiomyoma multiplex is probably not as rare as the few cases reported would seem to indicate, and with the attention that has been called to this condition by Dr. Frost and by Dr. Ormsby, I believe we shall hear more of it in the future. It has been

Fig. 3.—General arrangement of the tumor mass; hair follicle at lower portion of the section.

pointed out that tumors of the superficial type, which were discussed here, arise from the arrectores pilorum as well as from the muscular coats of the blood vessels. The group in which we have the single tumors is of deeper origin, arising chiefly from the tunica dartos, and occur wherever

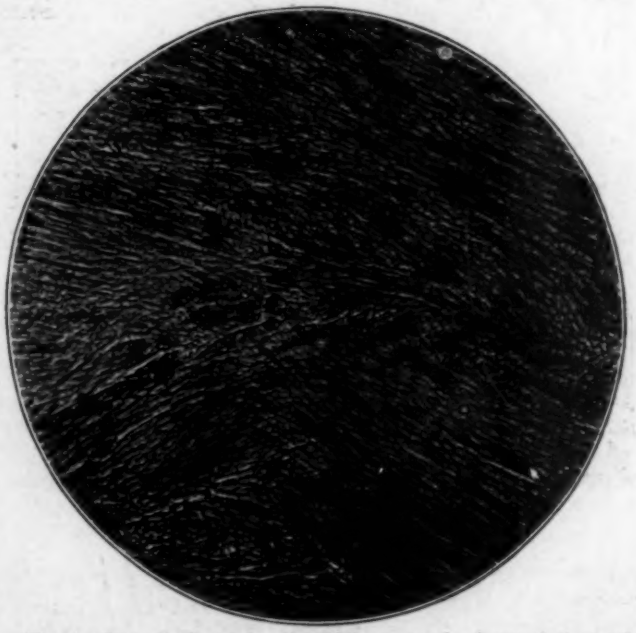

Fig. 4.—Part of Figure 3 under high power, showing typical smooth muscle nuclei.

that is found, on the genitalia and mammae. The hyperplasia of the fibrous tissue and of the vascular and lymphatic elements causes the formation of fibromyomas, hemangiomyomas and lymphangiomyomas. The lesions of leiomyoma multiplex bear a resemblance to linear types of nevi, and their presence may be suspected whenever soft, rather spongy,

shiny, smooth, elevated, brownish red nodules of about the shape and approximate size of a grain of barley are found aggregated in small groups or patches. The sites of election are the cheeks, neck and trunk, and paroxysmal pain is a prominent symptom, being present in about one half of the cases. Of course, microscopic examination is necessary for a positive diagnosis.

DR. FRED WISE, New York: I should like to add two cases to Dr. Frost's presentation, one of which occurred as a form of a linear nevus of the arm. The diagnosis of myoma cutis was confirmed by the microscope. The other case occurred in a young woman, and the condition was practically universal. No biopsy was made, and we were not absolutely sure of the diagnosis, but everything seemed to point to a generalized leiomyoma of the skin. I am hardly in accord with the idea that the disease is more common than we are led to believe by the number of cases encountered thus far. I think it is an extremely rare condition.

DR. KENDAL P. FROST, Los Angeles: Since this paper was written, two more cases have been seen in Los Angeles. One case had been confirmed microscopically; the other had not. In my case, pain was a striking feature. I rarely see patients in greater pain than this woman had during her paroxysms. She wore a very loose waist and practically nothing else over her back, and said she could hardly do any washing because the movement of the back would bring on a paroxysm of pain.

AGAIN, THE OPERATION FOR HALLUX VALGUS*

ALBERT H. FREIBERG, M.D.
CINCINNATI

It is not to be gainsaid that the ideal operation for hallux valgus would be one that would leave the foot as nearly like a normal foot as possible; this refers at once to the external conformation, intrinsic structure; mobility up to the normal limits, and function which would combine efficiency and complete comfort. If there

Fig. 1.—Before operation.

is occasion to add anything to a literature of respectable proportions, it must lie in the fact that there is reason for dissatisfaction with what has been heretofore proposed or practiced. I know of no procedure which, at least from a theoretical point of view, approaches the ideal to the extent that is reached by the plastic operation of Silver.[1] He holds the chief abnormality to lie in the alterations of the capsule of the joint, together with a degree of hypertrophy of bone on the mesial side of the metatarsal head which is often absent altogether. It must be granted that the joint surfaces themselves present no alterations of consequence except in cases of osteoarthritis of this joint, and in this event we are confronted with a situation that must be acknowledged as not remediable by operation at the present time. Although I am not able to say that I have thus

Fig. 2.—Three months after operation; on the right, a spur projecting from the lateral aspect of the metatarsal. It has the appearance of new bone and may be the result of regeneration of a bone particle. At the time, it was believed that the operation had been properly done.

far done the operation of Silver, it does not seem to me to meet the practical need, however much it may respond to the demand for a truly anatomic restoration. It restores to the individual his previous situation more nearly than any other operation. However, his previous condition was one in which the deformity was produced and, so far as we know, without the operation of any causes that are not acting in many other individuals who remain free from trouble. There is every reason to believe, therefore, that after this operation and in order to retain its advantage, the patient must be resigned to the idea of caring for his feet to a degree unnecessary for other persons, lest the deformity recur and with it the need for further operation. It must be remembered that the majority of patients who require operation are women, and that they come to us asking not for restoration of form or function, as a rule; they approach us rather in order to be relieved from suffering and disability, and with a dread of being condemned to wear shoes which they regard as an affliction in themselves, however perverted we may regard this notion, from the physiologic standpoint.

The most helpful view of the situation from the anatomic aspect seems to me to be that of Painter.[2] He looks on the condition as a shoe deformity, to be sure, but as probably dependent on an abnormal proportion of the different segments of the foot; perhaps an abnormal length of the metatarsal in one or both feet. This would have the effect of carrying the metatarsophalangeal joint too far forward in a shoe that might otherwise be of appropriate size for this foot. He concludes that the Hueter operation, which shortens the inner side of the foot by removing the metatarsal head, is the logical operation, and that the experience with it has been satisfactory. This is, in fact, the testimony of those who have done this operation with frequency.

* Read before the Section on Orthopedic Surgery at the Seventy-Fifth Annual Session of the American Medical Association, Chicago, June, 1924.

1. Silver, D.: J. Bone & Joint Surg. 5: 225 (April) 1923.

2. Painter, C. F.: Boston M. & S. J. 174: 636 (May 4) 1916.

Were it not for the fact that with most of such cases there are made qualifying statements in respect of a certain number of the cases, there would be no justification for this discussion. Painter remarks on "the tendency of the phalanx to ride up . . . leaving the toe out of contact with the floor when the patient stands." He proposes that this be avoided by the use of a suitable splint for two weeks following operation.

As a matter of fact, I have seen a number of instances, during the course of years, in which there was abundant cause for dissatisfaction by reason of the limited mobility in the joint, which had been the seat of a Hueter operation; in some instances, a bursal flap had been used with the express purpose of avoiding this. For two of the early cases of unsatisfactory character I was responsible, although I have never used the bursal flap. I believe it both unnecessary and improper to utilize for such a purpose tissue that is the seat of pathologic change. The study of the unsatisfactory results that I have been able to follow has convinced me that when the main steps of the Hueter operation have been tolerably well done, limitation of mobility of an objectionable degree afterward may usually be ascribed to certain shortcomings which appear to have been proved by the means that were used to overcome them. In addition to the limitation of mobility, two other shortcomings of the Hueter operation have been pointed out: the shortening of the first toe and the continuance of its abducted position. The shortening of the first toe should be looked on rather as an advantage than otherwise, for the reason that has been mentioned, unless it is unnecessarily great. When this occurs, it is to be looked on as a fault of technic, easily to be avoided. The loss of support that is incurred by the sacrifice of the distal end of the first metatarsal is, to my mind, a misconception, provided amplitude and power in plantar flexion are safeguarded. The continuance of the abducted position is a difficulty which it has been attempted to provide against, either by the wearing of a splint for a limited period, or by cutting off the metatarsal head on a slant. Both of these things are vain attempts, as a rule, for the reason that they disregard the causes. These lie, I believe, rather in the deformative pull of the extensor proprius tendon, on the one hand, and the abnormal length of the inner aspect of the capsule, on the other hand.

Fig. 3.—Metatarsal bone before a secondary operation; spur on lateral aspect of metatarsal head, probably left behind as the result of incomplete procedure.

My attention was attracted to the improvements which it was desirable to make in the Hueter operation by an experience, some years ago, in a case which was of more than ordinary interest to me and which I have been able to follow to the present time. This patient required the operation by reason of marked suffering; there was considerable overgrowth on the inner side of the metatarsal head (Fig. 1). The usual Hueter operation was done, and, so far as I knew, in precisely similar manner on the two sides. The operative recovery was prompt and flawless, so far as the wounds were concerned. The right foot was very comfortable from the beginning, and has remained so; the seat of operation in the left foot, however, was painful continuously for about two months. After this time, the pain subsided, but the mobility of the joint remained definitely behind that of the right side. An examination of the patient, made one year after operation, revealed her exceedingly

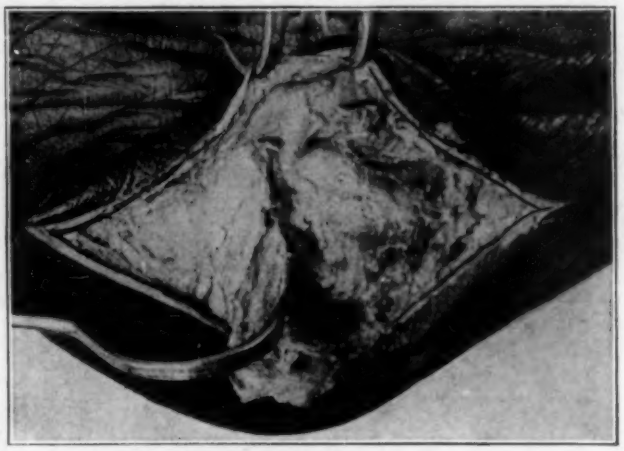

Fig. 4. Dissection of semicircular flap so as to expose head of metatarsal bone.

well pleased with its result; she was playing tennis regularly, and boasted that, in spite of injunctions to the contrary, she was wearing shoes of the most stylish (and objectionable) shapes with entire comfort and great satisfaction.

A roentgenogram made of both feet of this patient three months after operation showed that whereas the end of the metatarsal in the right, painless, foot was smooth, on the left side the end of the metatarsal presented a conical bony projection on its lateral aspect which came into contact with the articular surface of the phalanx. It was evidently to be looked on as the cause of the distress that was produced by motion, and also, in all probability, as the explanation of the limitation of motion here found. The examination of the roentgenogram does not make it certain to me whether this projection represents bone that I failed to remove at the time of operation, or whether it represents the reattachment of a fragment that had been left in the wound. I incline strongly to the first explanation. At the same time, it must be acknowledged that fragments that are left behind in such a wound may act as grafts and by their proliferation give rise to mechanical hindrance to motion afterward. In several instances that I have been able to observe by reason of their presenting for the purpose of reoperation, the original procedure having been done by other hands than mine, a similar situation has been observed; it has been apparent that either the lateral edge of the metatarsal had been imperfectly trimmed, or irregular bone outgrowths, such as might have had the regeneration of loose bone particles as their cause, were present (Fig. 3).

In consequence of the experience that I have had, I have set up for myself certain requirements for satisfactory operation, employing the principle of Hueter. Without going into unnecessary detail, I will mention them in order, together with the means employed to meet them.

OPERATION REQUIREMENTS

1. The capsule of the joint should be opened in such a way as to provide a plastic flap which may be utilized for maintaining the adducted position of the toe. This is accomplished by making a semicircular incision into the insertion of the capsule to the metatarsal bone, the convexity being toward the heel of the foot. This is dissected with the knife, downward toward the toe, thus exposing the metatarsal head. With knife and periosteal elevator, the head of the metatarsal is thoroughly freed, and especial care is devoted to its lateral aspect (Fig. 4).

2. After any bony outgrowth on the mesial aspect has been chiseled off, the head of the metatarsal must be thoroughly exposed in the wound so that it may be properly dealt with. This is facilitated by the use of a ribbon retractor of sheet copper or, as has been recently found convenient, by employing a Parham band for this purpose. Bent into U shape, the band is passed over the head of the bone, the ends bent backward over the skin. Thus is effected a very satisfactory exposure of the metatarsal head and, after its removal, of the joint cavity.

3. After the removal of the head, the end of the metatarsal should be reshaped. The part of the head that is covered with cartilage is cut off with a sharp osteotome. The sharp edge that is left is trimmed with cutting forceps, and the end of the bone made smooth and rounded by means of a file, curved on the flat. Unless the end of the metatarsal bone is given an appropriate shape, it may not be expected to have a satisfactory mechanical function, and plantar flexion, especially, will be interfered with. It is on this account especially important that a spur of bone should not be left behind at the lateral side of the metatarsal head, and that the inferior or plantar margin of the cut surface of the bone be well rounded off; otherwise the sesamoids are likely to be interfered with during the action of the flexor hallucis brevis. In order that the

Fig. 5.—The band retractor in place, the medial outgrowth having been chiseled off.

end of the metatarsal may thus be dealt with, the thorough exposure in the wound is of primary importance.

4. Care should be taken to remove all bone particles from the wound. After the visible fragments are lifted from the wound, it is flushed with a salt solution for this purpose.

5. The tendon of the extensor hallucis longus should be divided. By turning back the dorsal lip of the wound, the long extensor is easily exposed. It may be divided without hesitation and left thus; sufficient extensor power is provided by the separate slip of the extensor brevis.

Fig. 6.—After removal of the metatarsal head, the end of the bone having been reshaped with bone forceps and file.

6. The capsule flap should be overlapped to a degree providing for the maintenance of the adducted position of the toe. It is held in this position by placing several mattress sutures of silk (Fig. 7).

7. The wound having been closed, a splint should be applied for ten days in order to provide for the firm adhesion of the capsule flap. The splint is applied after the dressing has been placed. A wooden tongue depressor is used. It is held against the mesial aspect of the foot by means of adhesive strips; pressure on the wound is avoided by placing a felt pad against the foot, proximal to the wound. The end of the toe is brought over to the splint by means of a narrow adhesive strip, the lateral edge of the nail being protected by a thin piece of felt.

8. It is important to cultivate amplitude and power in flexion of the toe. Motion in flexion is begun on the tenth day. The splint is left off at this time. After recovery has taken place and for several months, at least, exercises in active flexion should be insisted on. While it is highly desirable that the patient should wear shoes of normal shape, I know that a number of my patients have disregarded this injunction without suffering in consequence. I am far from being satisfied that this should be done. I feel certain, however, that the observance of the details described above has made the results of this operation much more satisfactory as concerns both form and function.

ABSTRACT OF DISCUSSION

DR. JOHN L. PORTER, Chicago: Any operation for hallux valgus that removes the head of the metatarsal bone is absolutely unnecessary and unjustifiable. When Dr. Freiberg spoke about operations that take off an oblique piece of the head of the first metatarsal, he referred to me. Fourteen years ago, after seeing all the poor and very bad results from operations for hallux valgus, particularly from removal of the head of the first metatarsal, which used to be the

favorite operation, I came to the conclusion that the indications for operation in hallux valgus were three: chiefly, the relief of the deformity, the maintenance of motion in the joint, and the reconstruction of the transverse arch, about which nobody has said a word. In every case of hallux valgus, the patient not only suffers from pain of hallux valgus, but also suffers from metatarsalgia, for every one of them has complete flattening of his transverse arch. Taking off the first metatarsal makes it impossible to restore the transverse arch and keep it up there. The operation which I began using fourteen years ago and the description of which has been published twice, with modifications, was, briefly, this: The capsule is opened longitudinally in the straight line; the capsule is carefully dissected from the head of the bone because it is always adherent to its upper surface, and the head is completely exposed; then with a sharp chisel not only the protuberance, but one third of the head of the metatarsal is chiseled off smoothly, and then the first phalanx, which has been going off at an angle, is straightened. The success of that operation depends on how the first phalanx is held in position after the bone is taken off, and the simplest way I know of is the simple sewing up of the incision in the opposite way from which it is made. The incision, made longitudinally, is sewed up by carrying a mattress suture through the joint from one angle to the other while the assistant holds the phalanx in proper position. The knot is then tightened, and if a proper amount of bone has been taken off, the toe will remain perfectly straight, and the transverse arch of the foot is preserved. If we put on

Fig. 7.—Capsule flap fastened by mattress sutures so as to maintain adduction.

the plaster-of-Paris dressing and a pad carefully shaped to fit the transverse arch, when the patient gets back to bed she has not only less hallux valgus, but has a restoration of her transverse arch and is through with her metatarsalgia.

Dr. Melvin S. Henderson, Rochester, Minn.: I would agree with Dr. Freiberg that the operation of choice is the removal of the head of the metatarsal bone. We have had rather an extensive experience. Fifteen or sixteen years ago, Dr. C. H. Mayo described an operation which has since become generally known in this country as the Mayo operation. It is a modification of the Hueter operation. No one operation gives 100 per cent. good results, but taking it by and large, the operation has been one of the most successful operations in the whole field of surgery. Excision of the head of the metatarsal is said to weaken the transverse arch. All this talk about the transverse arch is more or less nonsense. It does not make much difference what one does to it. It exists only in anatomic drawings, etc. The question of putting the flap in after excision of the head is a minor point. It has the one advantage of stopping hemorrhage, and so far as limiting the motion, I feel sure that it does not do this. We have tried these different operations, and inevitably drift back to this operation described by Dr. Mayo years ago.

Dr. Albert H. Freiberg, Cincinnati.: Dr. Porter errs in stating that he restores the transverse arch, because there is no such entity. The transverse arch is maintained wholly by muscle action. When the toes are well flexed, there is a transverse arch, and when they are extended, it disappears. I should like to see some of Dr. Porter's restored transverse arches.

THE PHYSIOLOGY OF GLOBUS HYSTERICUS *

EDMUND JACOBSON, M.D., Ph.D.
CHICAGO

It used to be the fashion, when a symptom was found to be "functional," to tell the patient that there was nothing the matter with him; he should "go home and forget it." "Nothing anatomically wrong," said the neurologist, and that was all there was to it. But times change, and students are finding that disordered symptoms may be studied scientifically, even in the absence of structural pathologic changes. An interesting example is "globus hystericus."

The patient has the feeling of a foreign body in his throat, yet none can be found. On examination with proper instruments, nothing wrong is noted in the throat or speech apparatus. A sound passed down the esophagus may meet no unusual resistance, and the esophagus may present nothing more than a little redness or hyperemia (Rosenheim). It is generally agreed that "globus" occurs not alone in hysterical patients, but in many other conditions as well, and the descriptions given of the sensation often vary considerably from the classical expression, "ball in the throat."

Important is the matter of finding an objective means of investigation. To rely chiefly on statements by patients is not scientifically satisfactory. When such authorities as Kraus and Rosenheim conclude that "globus" is primarily a condition of disordered sensation, they are forced to rely in part on the patients' descriptions, and their conclusions, lacking further tests, remain open to doubt. We wish to learn whether the feeling is due to the walls of the esophagus meeting in slight spasm and thus pressing on each other, as would a foreign body if actually present. It seems not a good test to pass a sound or a tube, for slight spasm may conceivably be overlooked or overcome in this way. Rather it has seemed best in the present study to rely on the roentgen ray, a thick barium paste [1] being used.

Esophageal spasm, according to Vorkastner, was noted as early as 1740 by Hofman, and 1833 by Modière. Hamburger speaks of globus, in 1871, as "stenosis spastica migrans intermittens."

In 1895, Rosenheim argued that globus is primarily a condition of disordered sensation. Spasm is not a necessary characteristic, but might follow hyperesthesia. He failed to find spasm in many cases with the esophagoscope, noting nothing but a little occasional paleness or hyperemia. Kraus warmly sided with Rosenheim in 1902, maintaining that in many nonhysterical cases of globus, he had never been able to make certain of

* Read before the Section on Nervous and Mental Diseases at the Seventy-Fifth Annual Session of the American Medical Association, Chicago, June, 1924.

* Owing to lack of space, this article is abbreviated here by the omission of an illustration. The complete article appears in the Transactions of the Section and in the author's reprints.

1. The graphic method, with a balloon in the esophagus, as used by Carlson, is also valuable, and a kindred study of this type will soon be published.

spasm, for the patients were able to swallow without difficulty, and sounds could be passed. A further reason, according to Kraus, for believing in the independence of globus and spasm, is that pharyngeal spasm may occur separately as well as in conjunction with globus. In 1905, Max Buch also agreed that globus is not spasm, since difficulty in swallowing is not the essential mark of the former. He argued further that "cramps" of a hollow viscus never call forth a feeling as of a foreign body. He reported twenty-two cases, most of them with hyperesthesia of sympathetic origin.

In current literature, globus is often referred to as spasm or as possibly spasm. Osler and McCrae say that "some consider globus to be spasm in the lowest degree." Brooks [2] notes the connection between esophageal spasms and psychic conditions, observing that undoubtedly the most frequent basis of esophageal spasm is some disturbance of the emotional balance.[3]

In the examples to be presented: 1. No difficulty in swallowing was observed or complained of. 2. Moderate spasm of various portions of the esophagus was present with the experience of "globus." 3. A fairly thick barium paste might in part remain thickly held in the esophagus for more than from ten to twenty-five minutes after swallowing.[4] 4. At another time, when no symptoms were complained of, the paste passed through without undue delay.[5] 5. Spasm of other portions of the gastrointestinal tract might accompany that of the esophagus.

Fig. 2 (Case 2).—Spasm of esophagus in globus hystericus, confirmed under the fluoroscope.

REPORT OF CASES

CASE 1.—S. L., a married woman, aged 34, was evidently of neurotic disposition when first examined, in December, 1922. Her chief complaint for more than a year had been a fear of fatal heart disease, along with palpitation, and spells of difficulty in drawing breath, followed by chills and transient diarrhea. She also had extreme fear of being at home alone. At the opera, she sometimes became so excited that she had to leave. Physical examination proved generally negative, apart from an occasionally discharging left ear and occasional slight albuminuria. The heart was normal; the blood pressure was 120 systolic, 98 diastolic.

Oct. 20, 1923, she reported that coryza had made her particularly nervous and fearful during the week. For the last two days, she said, she almost continually had a lump in her throat. It was "like a stiff tube." Recently, she had called a similar experience a "ball in the throat." There was no difficulty in swallowing.

At 1:40 p. m., the patient swallowed two teaspoonfuls of barium paste, as described, and the same amount ten minutes later. At 1:53, the film shown in Figure 1 was taken. There was apparent spasm of the entire esophagus, with persistent delay in emptying until about 2:18 p. m. The esophagus was normal in outline. The passage of the opaque material was most markedly delayed at the point of exit, where the diameter seemed distinctly narrowed. The barium entered the stomach very slowly. The stomach outline seemed normal. Pylorospasm was present. A small, normal bulb appeared after fifteen minutes.

CASE 2.—K. B., a married woman, aged 38, was seen in private consultation, in 1917, when the general physical examination was negative, except for visceroptosis under the roentgen ray. She complained excessively in a typically neurasthenic manner. In 1918, at Michael Reese dispensary, she complained of "pains all over," headache, dizziness, nausea and gnawing epigastric pains after eating, belching, leukorrhea and irregular menstruation. On one occasion, she mentioned a feeling as of food "sticking" after eating. Many of her symptoms disappeared after four months' rest, but she stated that she was too nervous to attend to her children. In February, 1919, she passed out of my care for a time, going to the hospital, where a diagnosis of visceroptosis and neurasthenia was made. In April, 1919, she returned, complaining of a "cold." There were localized râles and dulness with positive roentgen-ray findings of tuberculosis, and she was sent to a sanatorium for a period. There was a little edema of the extremities. She seemed to recover from the tuberculosis, had gained almost 50 pounds (23 kg.) by February, 1920, and felt fairly well. After a year or two of relative comfort, she again appeared with various complaints, such as pains in the hands, feet and knees, spells of faintness and weakness, insomnia, pain in the anal region, and headache at the vertex. The systolic and diastolic blood pressure at various times was 174/112, 138/94, 206/140. The Wassermann test was negative, and the blood counts were normal.

May 17, 1923, she complained of a "choking sensation" in the throat, and, on fluoroscopy, the esophagus appeared spastic. The following week, the film was taken as shown in Figure 2. June 7, the feeling in the throat had largely disappeared, and, on fluoroscopy, there was almost normal physiology. No marked delay appeared at the cardia. On examination in June, 1924, when no throat symptoms were complained of, the opaque material passed through the esophagus in a normal manner.

CASE 3.—A married woman, aged 40, had had occasional epileptic attacks since the age of 31. Her complaints, in 1923, led to a diagnosis of esophageal spasm, after roentgen-ray examination. The case is reported here only to illustrate that in mild esophageal spasm no difficulty in swallowing may be complained of.

2. Brooks, Harlow, in Tice's Practice of Medicine.

3. Vorkastner, W., in Lewandowskys' Handbuch der Neurologie **5**, 1914. Kraus, F., in Nothnagel's Spezielle Pathologie und Therapie, **2**: 120, 1902. Reference lists are given by these two writers. Rosenheim, T.: Ueber die Neurosen des Oesophagus, Allg. med. Centralztg. **64**: 1173, 1895. Buch, Max: Globusgefühl und Aura, Arch. f. Psych. u. Nervenkrankh. **40**: 704, 1905. Barjon (Examen radiologique de l'oesophage, Lyon méd. **131**: 187-200 [March 10] 1922) also notes dysphagia as a symptom of spasm.

4. It is important to distinguish between the barium persisting as a thick mass in the esophagus and merely as a thin coating adhering to the walls. The latter is not to be taken as evidence of spasm.

5. The barium sulphate was made into a paste with malted milk, chocolate and a little water. Such a paste passes through the normal esophagus more slowly than a fluid mixture of barium. Therefore, to avoid error, the diagnosis of spasm must not be made from the films alone, but must be confirmed with prolonged fluoroscopy.

COMMENT

If we examine the positive side of the evidence that globus is essentially hyperesthesia, it does not seem convincing. In my own studies, there was no conspicuous evidence of such hyperesthesia. However, even if the esophagus is hypersensitive, as Rosenheim observes, and even if the sympathetic system is particularly sensitive, as Buch seeks to prove, the question would still be left open whether this would explain the origin of globus; for the sensory theory of globus clearly denies the presence of spasm, and therefore is open to refutation by means of the roentgen ray, as we have seen. On the other hand, the motor conception of globus need not deny a possible associated element of hyperesthesia. Indeed, it might seem reasonable to expect a spastic muscle *ipso facto* to be hypersensitive. In experiments soon to be reported, it has been found that sensitivity may vary with changes of striated muscle tonus. This is a further question that need not be discussed here. In any event, without denying a paresthetic element, we may assume that globus is essentially a spastic phenomenon. The walls of the esophagus, meeting in spasm, feel somewhat like a bolus of food and suggest to the patient the experience of a foreign body. Since my studies have been few, further observations by other workers are desirable.[6]

310 South Michigan Avenue.

ABSTRACT OF DISCUSSION

DR. DAVID S. BOOTH, St. Louis: Does the location of the spasm of the esophagus have any bearing on the globus in the throat?

DR. JOSEPHINE A. JACKSON, Pasadena, Calif.: Dr. Jacobson refers to an underlying pathologic physiology in this condition, so I do not know whether or not I shall be out of order in bringing up the etiologic basis of it. I wonder whether any one might get the impression from Dr. Jacobson's paper that pathologic physiology means dismissing or doing away with the psychology in these cases. Kempf, in his work on the automatic nervous system, makes us understand how promptly any idea produces a physiologic change. Now, the name of the condition, globus hystericus, was, of course, given by the ancient Greeks with the idea that the uterus itself had traveled up into the throat, because the globus, as the author demonstrates, is a spasm, which, of course, makes a thickening. Therefore, it means an actual lump that is distinctly felt. There are other tubal structures which have a similar spasm, as the colon or the rectum itself. This might cause us to think, since very promptly the idea is translated into a physical condition, that always there would be a physical parallelism with psychic activity.

DR. EDMUND JACOBSON, Chicago: Patients with globus do not always describe it classically as a "ball" or "lump in the throat." Several writers describe a variety of sensations; for example, a feeling passing up under the sternum, or one referred to the epigastrium. In my experience, any portion of the esophagus or cardia may be involved in the spasm. No correlation has been made between the locality and the location of the sensation. To be decisive on this point would require a larger number of observations. The relation of emotions to globus is a separate problem. Writers sometimes discuss emotions, but fail to distinguish between speculation and experiment. Graphic methods illustrate the experimental approach to the subject.

6. The innervation of the esophagus is discussed by Carlson and his associates in a recent article. They conclude that there are efferent motor and inhibitory fibers in both the vagi and the splanchnic nerves leading to the cardia and lower end of the esophagus: Carlson, A. J.; Boyd, T. E., and Pearcy, J. F.: Studies on Visceral Sensory Nervous System; Reflex Control of Cardia and Lower Esophagus in Mammals, Arch. Int. Med. 30:409 (Oct.) 1922.

SOME SPECIAL FEATURES OF MASSACHUSETTS' PROGRAM FOR VENEREAL DISEASE CONTROL*

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In recent years, venereal disease control programs have been presented and discussed from various angles at all kinds of medical meetings.

After the high tide of enthusiasm in this direction, engendered by the abnormal conditions of the war time period, most health administrators expected that there would be a recession of financial and popular interest in this newly inaugurated work of health departments. This has occurred; also many tentative schemes enthusiastically advocated during the hectic war time period, particularly in the direction of popular education and forcible repression, have failed to meet the acid test of consistent support by general public sentiment. Appropriations have in many instances fallen off sharply, and in some instances practically disappeared. It has been demonstrated that it is not at present possible to get the public to receive educational, epidemiologic or isolation policies for syphilis or gonorrhea on the same plane and in the same spirit that it will, for instance, for tuberculosis or diphtheria.

It has been, we believe, adequately demonstrated that however we may look on this subject purely from its communicability and public health aspects, the public is unable to consider the public health aspect as something entirely apart from the problems of private and public morals equally associated with the venereal question. On the other hand, experience has shown that there are definite niches for the public health departments, for the clinicians, the social service forces, the law enforcement agencies, the educators, and the guardians of public morals in a sane program for the control of venereal disease.

The great problem now is that of interpreting the proper sphere of each of these groups, and working out a program of efficient articulation and correlation of these various spheres of action and responsibility.

Perhaps the most pressing duty in this field now resting on the health administrator is that of endeavoring to determine just what lines of activity are clearly his own peculiar responsibility; and to perfect the technic of procedure in these before concerning himself too greatly with the activities peculiarly belonging to some of the other groups previously enumerated, although at all times maintaining a sympathetic cooperation and stimulative policy in respect to the repressive, clinical and moral phases of the problem.

Before proceeding to the discussion of the main topics of this paper, I shall give a brief explanation of the organization, personnel and general policies of the subdivision of venereal diseases of the Massachusetts Department of Public Health.

* Owing to lack of space, this article is abbreviated by the omission of two charts. The complete article appears in the Transactions of the Section, and in the author's reprints.

* Read before the Section on Preventive and Industrial Medicine and Public Health at the Seventy-Fifth Annual Session of the American Medical Association, Chicago, June, 1924.

ORGANIZATION, PERSONNEL AND GENERAL POLICIES

The subdivision of venereal diseases was created in 1918 as a part of the general division of communicable diseases. The staff of the subdivision numbers eight: one physician, who serves as chief of the subdivision; one attorney for special work with the courts; one special investigator (male); two social workers (female); one stenographer, and two clerks.

Gonorrhea and syphilis were made reportable in Massachusetts in February, 1918. Reports are made by number direct to the state department of public health and not by name, contrary to the procedure used in reporting cases of the other communicable diseases dangerous to the public health. Reports are required of patients only in the active or infectious stage of the disease, which explains a certain discrepancy between the total reported cases and the number of specimens submitted for the Wassermann test. In line with the procedure in many other states, physicians are required to report to this department by name patients who have allowed treatment to lapse. These cases are then reported to the local board of health having jurisdiction, and, if requested by the local board of health, the assistance of the division staff is available for locating such cases and restoring them to treatment and supervision. If patients refuse treatment, they may then be quarantined by the local board of health, but this procedure has almost never been found to be necessary. As to policies, the Massachusetts department of public health has consistently attempted to cover ground in venereal disease work where there could be little or no question of its being within its own proper sphere and its methods. The methods for the control of venereal disease are not markedly different from those of many other state venereal disease divisions, except that there has never been any effort made to develop expert clinicians within the department for diagnostic or curative service, and the educational work of the subdivision has always been carried out as part of the general educational work of the department as a whole.

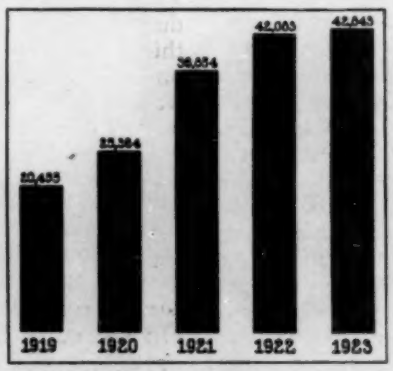

Fig. 3.—Arsphenamin distributions, 1919-1923, based on dosage of 0.6 gm.

There are some features of the Massachusetts program which are strictly within the proper provision of a state health department's activities and yet which may not be generally known or widely followed in other states. We are presenting illustrations of these special activities, which fall roughly into the following classes: curative, repressive, law enforcement, and, generally speaking, educational, with the hope that our experience may be of value to other departments of health. They are:

1. The manufacture and distribution of arsphenamin and analogous products.
2. Work among the pharmacists in reference to nostrums.
3. Cooperation with the courts.

ARSPHENAMIN AND SULPHARSPHENAMIN

A resolution authorizing the state department of health to provide for the prevention and suppression of syphilis, passed by the legislature of Massachusetts, April 11, 1916, reads as follows:

Resolved, That there be allowed and paid out of the treasury of the commonwealth, a sum not exceeding ten thousand dollars, to be expended under the direction of the state department of health in purchasing dioxydiamino-arsenobenzol and its derivatives, or other substances of equal or greater value in the prevention of the transmission of syphilis, or in making investigations as to the practicability of manufacturing, or in manufacturing, the same for free distribution to boards of health, hospitals, dispensaries and physicians for use within the commonwealth in the suppression of syphilis in such manner and subject to such rules and regulations as the state department of health shall prescribe.

Because of the disturbed conditions due to the war and the blockade enforced on German products, it was soon determined that the only practical line of procedure was to reproduce as closely as practicable the technic of the manufacture of arsphenamin. Preliminary chemical experiments soon demonstrated that the directions given in the description of process as filed in the United States Patent Office were absolutely worthless. Hence the problem was one of reproducing, or rather of producing, an analogous product as a result of the department's own experiments. The method now in use at the state arsphenamin laboratory for the manufacture of both arsphenamin and sulpharsphenamin is given in Figures 1 and 2.

Considerable difficulty was experienced before an arsphenamin was obtained that came up to the necessary requirements. This was finally accomplished in the laboratory of the food and drug division of our department during 1917, and in 1918 was produced in sufficient quantities to supply the state approved clinics. During 1919, the manufacture of arsphenamin was established on a quantity basis for free distribution to hospitals, clinics and physicians throughout the states, the only stipulation being that no charge should be made to patients for the drug. This, of course, in no way prevented the physician from charging a fee for his professional services in private cases.

The usual centers of distribution are the so-called "state approved" venereal disease clinics. Physicians desiring the product must satisfy the chief of the clinic that they understand the technic of preparation and administration of the drug.

A word of explanation in reference to these clinics is perhaps necessary. There are, in all, eighteen such clinics, so located geographically that facilities for diagnosis and treatment are readily available to any one in need of these. The staff of the subdivision is in constant touch with the work of these clinics, and a regular system of quarterly conferences is carried out, by which the chiefs and sometimes the assistant chiefs of all the clinics meet for presentation of papers, discussion of cases, and the holding of illustrative clinics in the larger hospital centers of the state. These conferences are very well attended, and appear to be of real value to the staffs of the various clinics.

These clinics receive from the state subsidies of from $500 to $1,000 annually, with such supplies of free arsphenamin as they may require, but, in order to be eligible for this assistance, the clinic must conform to the clinic standards adopted by the department of public health. By these means, the department has a guiding hand in the conduct and activities of these clinics.

Figure 3 shows the distribution of arsphenamin by years.

Since Ehrlich introduced arsphenamin in 1910, the need has been felt for a product similar in nature but more adaptable for use by the general practitioner, especially in treating cases of children, obese subjects and those who have had long courses of treatment, in whom suitable veins are often difficult to find.

The State Department of Public Health of Massachusetts has never manufactured the "neo" product, mainly on account of its chemical instability; but when

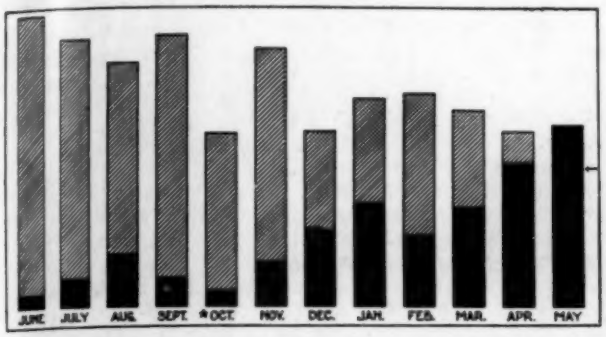

Fig. 4.—Relative monthly distribution of arsphenamin and sulpharsphenamin from June 1, 1923, to June 1, 1924: shaded areas, arsphenamin; black, sulpharsphenamin; star, lack of product to meet demand; arrow, arsphenamin height.

sulpharsphenamin was first produced, and was favorably commented on by the United States Public Health Service, our arsphenamin laboratory staff produced a batch, and, after extensive pharmacologic tests, made both by Dr. Reid Hunt of Harvard Medical School and at the Hygienic Laboratory at Washington, this product was distributed to the state approved venereal disease clinics for trial.

The comparative safety of sulpharsphenamin, even over neo-arsphenamin, its ready solubility, the degree of concentration of solution which can be used without the element of danger of overneutralizing or underneutralizing with caustic soda, and its high therapeutic and penetrating power have made this preparation a favorite. It has been more economical to manufacture, mainly because of the fact that the toxic batches of arsphenamin occasionally available in the laboratory can be converted into safe sulpharsphenamin. We began manufacturing sulpharsphenamin in June, 1923, and have as yet distributed the product mainly to our clinics and physicians who have particularly requested it, but we are now satisfied that it has a definite place in the treatment of syphilis, and are prepared to manufacture it for free distribution to all physicians. To May 30, 1924, 12,187 doses of sulpharsphenamin, 0.6 gm., have been distributed.

There is considerable difference of opinion regarding the irritating properties of sulpharsphenamin when injected subcutaneously or intramuscularly; results from some clinicians after several hundred doses have shown that only a slight burning has been complained of at the point of administration, which has not been intense and has been of a quite temporary character. Others have reported painful induration at the seat of injection, which has lasted for twenty-four hours. Apparently the least unpleasantness is exhibited when a concentrated solution, for instance, 0.3 gm. of sulpharsphenamin, dissolved in 0.9 c.c. of distilled water or sterile physiologic sodium chlorid solution, is given hypodermically in the loose connective tissue. Higher doses, up to 0.9 gm., have been given repeatedly by several clinicians without any unpleasant reactions. Others have had reactions of a nitritoid type, dermatitis, etc., and one death; this was due to shock in a patient with heart disease shortly after the administration of the drug after the fifth treatment had been begun.

The relative demand for arsphenamin and sulpharsphenamin is shown in Figure 4, although up to the present no special effort has been made to "push" sulpharsphenamin with the general practitioner.

PROPRIETARY AND QUACK REMEDIES

The fact that special legislation is not always necessary to carry out health measures is forcefully shown by the campaign conducted by the department against proprietary and quack remedies sold by druggists for the self-treatment of venereal diseases. It was thought advisable to have a special investigator of the department visit each druggist in the state, explaining to him in detail the department's program in venereal disease control. The prevalence, dangers of home treatment, and complications of venereal disease were outlined, and the necessity of thorough and scientific treatment emphasized. The druggist was then asked to cooperate with the department by refusing to carry in his drug store any nostrums for the treatment of venereal diseases. The pharmacists almost to a man were found to be interested and highly cooperative, and in most cases were unaware of the activities that were being conducted toward venereal disease control. As a general thing, these men had not given thought to the consequences of badly treated cases, or realized that they were instrumental in deceiving the unfortunate victim, leading him to think that his misfortune was slight, and easily and speedily cured by the taking of some highly advertised concoction.

A recital of the complications and dangers of gonorrhea, the difficulty of absolutely curing these cases, the uncertainty of anything less than the most scientific

Fig. 5.—Exhibit containing fifty different preparations for self-treatment of gonorrhea, voluntarily contributed by druggists.

treatment, the complications of syphilis, and the cost to the state for the upkeep of patients with tabes and general paralysis was given. Almost invariably, a search was made of the shelves, and a collection of the products made and either emptied into the sink or packed up for return to the wholesaler or manufacturer, or our representative was asked to take them away and destroy them. Only a few of those visited failed to respond, giving as an excuse that they would cooperate if all others would do the same. On a return visit, these invariably fell into line, and we can now report

full cooperation from the 1,400 druggists so far seen. A list of the state approved clinics, where patients can receive free treatment if they are unable to pay a physician, is always left with the druggist so that he may refer persons who may inquire about facilities for treatment.

The wholesale drug houses were visited, and usually the general manager or vice president who was seen asked for a list of these preparations so as to discontinue stocking them. The difficulty was to give a complete list, as almost daily new ones were discovered. Figures 5 illustrates some of the most common of the nostrums.

COOPERATIVE WORK WITH THE COURTS

In its program for the control and suppression of venereal disease, Massachusetts has never been in favor of drastic legislation, and our health department has not approved placing on our statute books acts which were not endorsed by public opinion.

The following statute covers the physical examintion of prisoners:

> The warden of the state prison, the superintendents of the Massachusetts reformatory, the reformatory for women, the prison camp and hospital and the state farm, and the keepers and masters of jails and houses of correction shall cause a thorough physical examination to be made by a competent physician of each inmate in their respective institutions committed for a term of thirty days' imprisonment or more. In conducting the examination, special attention shall be given to determining the presence of communicable disease, particularly gonorrhea, syphilis and pulmonary tuberculosis.

There is nothing in this act which covers the examination and, if necessary, treatment of sex offenders not given a jail sentence while in the hands of the court. Therefore, in 1918, with the object of reaching such offenders, a letter was sent to the justices and special justices of the Boston Juvenile Court, and the police, district and municipal courts in Massachusetts, which read, in part, as follows:

> You are perhaps familiar with the action taken by the Massachusetts State Department of Health, whereby, dating from Feb. 1, 1918, gonorrhea and syphilis were declared to be dangerous to the public health and were made reportable by physicians to this Department.
>
> In close cooperation with the War and Navy departments and with the federal Public Health Service we have inaugurated a vigorous campaign against these menaces to national efficiency.
>
> In the execution of your official duties, you are almost daily placed in a position in which you may render a great service to this campaign. This is especially true in cases put on probation by your court. Prisoners in a penal institution suffering from syphilis in an infectious stage may be held there under treatment until they are no longer a danger to the public health, even though this may detain them beyond the time of expiration of their sentence. In cases on probation, however, because of the comparative freedom allowed the probationer, both in his movements and in his choice of medical attendant, effective treatment may or may not be persisted in for the desired period. . . .
>
> From a health officer's standpoint, to place on probation a person suffering from a venereal disease in an infectious stage, without requiring that person to take prompt, regular, effective treatment, or to place a person charged with an offense against chastity on probation without first ascertaining whether or not that person is capable of communicating a venereal disease is a failure properly to protect the public health. . . .
>
> For these reasons we suggest that you instruct your probation officers that, as soon as the state approved clinic in their vicinity is established, each case in their charge, proved to be suffering from gonorrhea or syphilis in an infectious stage, should be placed under treatment in that clinic and at the same time that the medical disposition of the case be reported to us.
>
> In order to get the fullest result this procedure should, if this is possible, apply also to cases held waiting commitment, who now, although perhaps a danger to the health of other prisoners, are able temporarily to escape compulsory examination and treatment.
>
> We also suggest that you make it the rule of your court that as many offenders as possible, at least all persons arrested for offenses against chastity, shall submit to a physical examination by a competent physician before the final disposition of the case; also, that you suggest to the court official having in charge a case suffering from a venereal disease, presumably reported to this department according to statute, that he give to the person in authority over the prisoner a copy of the laboratory findings in the case and a statement that it has been reported to this department under such and such a serial number. This statement, when received by the physician later undertaking the treatment of the case, will prevent duplication in reports to us, and will save unnecessary repetitions in diagnostic tests.
>
> By some such measures as these the courts of this commonwealth can be of great assistance in our efforts to control this widespread physical evil, this national menace, efforts urgent in time of peace, imperative in time of war.

In the fall of 1919, a representative of the department was given the task of visiting each of the courts of the state to discuss the policy of the department in the control and suppression of venereal diseases, the prevalence and importance of venereal diseases, the location of the established clinics for free treatment, and to ascertain whether, with our present legislation, the court officials could properly make an effective disposition of all sex offenders and those coming before their courts accused of offenses against chastity.

We have in the state eighty-eight courts: fourteen superior courts (one for each county), and seventy-four lower courts, made up of fifty-two district courts, thirteen police courts, eight municipal courts and one juvenile court. Besides the juvenile court, which is situated in Boston, juvenile sessions are held in all other courts outside Boston.

The survey was highly satisfactory. Most of the courts in the state responded favorably, some making the suggested plan as outlined above a strong and active part of their court action.

It was considered desirable to continue having a field worker engaged mainly in this line of work, as considerable effort was necessary in revisiting courts where the probation officers and judges require assistance in properly disposing of their cases. Many court officials were enthusiastic, stating that the program gave them a new and much needed approach to many who are brought into the court, and offered a better solution of many problems which had hitherto been difficult to handle.

The department's special investigator gives considerable time to the probation officer, who has the unique position of being interpreter, counselor and intermediary, the friend of the defendant, the heart of the court. In the satisfactory disposition of cases, much depends on his vision, tact and persuasive powers. In addition to the judges and 157 probation officers, the policewomen in many cities are proving a strong ally to the courts.

The policy of some courts is to have the case continued so that the defendant can be examined, the probation officer having the custody. Some judges have taken the stand that a refusal of medical examina-

tion is sign of guilt, and therefore do not hesitate to impose a sentence of thirty days in the house of correction, thus insuring a thorough physical examination. Some judges have had to be won over from such opinions as the following: That punishment was necessary, and that the thirty dollar fine for fornication was necessary, rather than the more happy and effective disposition of the case under probation with proper treatment.

Some courts have attending physicians; others request physicians, often from established venereal disease clinics, to advise them or to examine defendants

The local boards of health assume responsibility for the expense of examination, or the expense is paid from the probation officers' funds, but no court is left with this difficulty unsolved.

Results from the revisiting of about a dozen or more courts showed that, out of 1,500 sex offenders who had been examined, 605 were found to have venereal disease. In one comparatively small court, 121 defendants were examined during the year. There is an opportunity for really effective work when a girl of 13 having gonorrhea and being five months' pregnant comes under the care of a woman probation officer properly enlightened on public health matters. In another case, the marriage plans of a mentally deficient 17-year old girl, having both gonorrhea and syphilis, were interrupted by committing her to an institution for treatment.

Enthusiastic cooperation can be secured only by keeping in touch with the various courts through literature and by frequent interviews. Tact, judgment and patience are essential qualifications for one engaged in this work; and, in the work with the courts particularly, a legal training is a valuable asset.

A large proportion of the public still fails to appreciate that the spirit and purpose of the court is to be sympathetic and helpful. Public opinion must be educated and enlightened to keep pace with the officers of the court and public health officials. We feel that, with our present methods, we are accomplishing our purpose in the field of venereal disease control, and that drastic legislation is not at present required or desirable.

ABSTRACT OF DISCUSSION

DR. C. C. PIERCE, Chicago: I was very much interested in Dr. Kelley's presentation of three phases of the Massachusettes program for venereal disease. There are many other phases of this work going on in Massachusetts, as there are in other states. I wish to express my views in regard to one statement made by Dr. Kelley. He referred to the delimitation of the field of the health department in this particular work and the field of the social agencies, of law enforcement, church, educators, the clinicians and others who actually have a very important and responsible part to carry out. The health department should realize not only that these other groups have a part to play in the venereal disease program, but that the health department should define the field of each of these groups; show them why they should engage in this work, and help them to formulate plans as to how they should participate. In that way the health department will be the center around which these cooperating agencies can work; the program will be articulated definitely with the work being done by the health department; there will be some intelligent supervision on the part of the people who should know what should be accomplished by the activities of these various agencies. Therefore I feel that there is a very important part for the health department to assume in the guidance, direction, and the formulation of plans for all the various cooperating agencies. The manufacture and distribution of arsphenamin accomplishes really more than providing efficient and tested remedies for the treatment of syphilis. It is somewhat comparable to the state health department distributing antitoxin for diphtheria; it places venereal diseases on the same plane as other communicable diseases, which the department attempts to control, and therefore has an educational value. The importance of controlling prisoners and others apprehended for commission of crime and suffering from venereal diseases is very important, as such persons form the most dangerous class of spreaders of venereal disease that we have. Persons of sufficient mentality to keep out of the clutches of the law, or with protective instincts developed sufficiently to avoid arrest, are not nearly as dangerous to the community as those who have venereal disease and are apprehended for some crime. The Massachusetts Department of Health is on the right track in soliciting the cooperation of the courts of the state in keeping prisoners with venereal disease under treatment until they are no longer a menace to the community. It would be a crime against public health to release a known criminal after a short jail sentence if he still had a communicable disease in an infectious stage. The health department has a good argument to present when it asks druggists not to sell to the general public "patent" proprietary medicines exploited for the cure of venereal diseases. Improper treatment of persons with gonorrhea or syphilis does not cure the patient, and results in his being an actual menace to those with whom he comes in contact because he believes he has been benefited or cured by taking the advertised remedy. Those who have had experience in venereal disease control know that nostrum treatment of venereal infections is worse than useless.

DR. H. G. IRVINE, Minneapolis: Perhaps the most important problem we have to face today in connection with venereal disease is the problem of appropriation, and what is best to do with the money that is available from the standpoint of the final effect on the treatment and control of these diseases. I think that without doubt nearly all the states are facing this problem of reduced appropriations. All should have started out during the war with this in mind and with a definite plan of decentralization so that the cost of work would be taken over by local communities and the work still go on in face of withdrawl of federal aid. What are the most prominent problems? I believe, first of all, administration. We must have allotment for that. Second, operating a laboratory for the Wassermann test and smears. The examination of smears should be discouraged as fast as we can educate the members of the medical profession to do their own work. A man who has not a microscope and is not capable of making an examination for the gonococcus really should not treat these cases. We feel that practically every man who sends a smear to the laboratory is more or less incompetent so far as the treatment of that disease is concerned. There should be stimulation to get the men to do that work themselves. They should be educated to become competent. The state laboratory offers an excellent opportunity to secure the cooperation of the medical profession, and that is one of the crying needs of any public health work, particularly when the case originates with the physician. If the profession does not cooperate voluntarily, it is going to be almost impossible to succeed in the control of these diseases. I think that one of the best ways to get that is to furnish this service to the physicians. It has been interesting in our laboratory, which started during the war, to watch the increase in the number of cases investigated. We have come up to as high as 50,000 tests this year. This shows that the medical profession is on the lookout for these diseases. The next item of importance is that of social service: it is absolutely necessary to have some agency to assist in the control of these patients, and I believe that is a part of the bureau of venereal diseases that should certainly be kept up. I should like to say a word about arsenicals, in comparing sulpharsphenamin and arsphenamin. I notice that Dr. Kelley uses arsphenamin and that the state does not produce neo-arsphenamin, which is most popular because of the ease of administration. I believe that manufacturers sell two to one of neo-arsphenamin, and if the state of Massachusetts made that I think comparison between that and sulpharsphenamin would be rather different. There is one thing to bear in

mind, and that is that in spite of the fact that sulpharsphenamin has been pretty well tested so far as danger is concerned, we still do not know its final therapeutic evaluation, and this will not be known for some time. It is not possible to decide the final value of a product simply from disappearance of a positive Wassermann reaction or a lesion. The thing we must bear in mind is the final cure of syphilis, if that is possible, and it takes a good many years to estimate the value of a product so far as final cure is concerned. I look with some hesitancy on a product until we know this. Syphilologists say that sulpharsphenamin has two points of value: first, its use intramuscularly is of great value in the treatment of infants, in whom it is hard to get into a vein; second, it possibly has a more specific effect on syphilis of the nervous system and will be of great value there. Drs. Kelley and Pfeiffer did not tell us how much it costs to manufacture their product, and I think it is important to take into consideration now that the product can be purchased so cheap. I should like to know what it costs them.

DR. EUGENE R. KELLEY, Boston: I cannot tell precisely what arsphenamin costs us. Sulpharsphenamin is a by-product. It does not add a cent to our overhead. The principal reason we did not use neo-arsphenamin was simply that we felt there was a certain amount of instability to that product. The points brought out by Dr. Irvine are well taken. There is a practical point about sulpharsphenamin—we can take rejected batches of arsphenamin and change them over to sulpharsphenamin at very small cost, thus salvaging a prospective loss. Hitherto, we have been rather collaborating with some other laboratories and clinics and trying out sulpharsphenamin as an experimental proposition; but we are now producing it as a routine product. In Massachusetts we have an appropriation of approximately $20,000 a year for the manufacture of arsphenamin and like products. The amount produced last year was 42,000 standard doses. This figures out about 30 cents a dose. Originally this product was manufactured in the laboratory of our food and drug division in the state house, and we thus avoided overhead costs, but the superintendent of buildings objected to the fire risk because of the presence of the large amount of ether necessary in the process, and we had to rent a small building. In reply to the inquiry regarding our budget, we have between $70,000 and $80,000 for venereal disease control.

Clinical Notes, Suggestions, and New Instruments

WORM IN THE EAR DRUM

KOPLAND KARL MARKOFF, M.D., NORWICH, CONN.

A man, aged 34, came into my office, July 31, with a handkerchief held over his left ear. The handkerchief was stained with blood, which was coming from the ear. The patient gave a history of bleeding from the ear since the previous Saturday, and complained of a hissing sound in his ear. He also stated that he had had a discharge of pus from his ear on and off for seven years. He saw his physician about his present condition the day before, who irrigated the ear, but as the bleeding continued as well as the hissing, he was referred to me.

The external canal was filled with fresh as well as coagulated blood. When the canal was wiped out, the classical pearly white water fall was seen coming from the lower half of the ear drum. At first glance this looked like pus; a swab, after touching it, came out perfectly dry; but still the glistening pearly white, so-called water fall continued. On close examination this white object proved to be a worm such as is found in apples, and as it moved, trying to enter the rupture in the drum, the segments of its body moving back and forth gave the impression of a purulent discharge from the middle ear. About two thirds of the worm was already in the middle ear. The worm was extracted with forceps and proved to be 25 mm. long, with a diameter of about 2 mm.

Special Article

DIPHTHERIA MORTALITY IN THE LARGE CITIES OF THE UNITED STATES

Comparative studies of diphtheria mortality in various localities have appeared at fairly frequent intervals ever since the introduction of the diphtheria antitoxin treatment in 1894-1895. A number of observers have drawn attention to the marked differences both in the actual diphtheria mortality in different localities and in the trend of the mortality rate. Cobbett [1] pointed out, more than twenty-five years ago, that diphtheria diminution in London was at that time by no means keeping pace with the marked decline observed in continental cities, and Jordan,[2] at about the same time, showed that marked variations in diphtheria death rates could be observed in American cities in the years following the introduction of the antitoxin treatment. More recently, a careful statistical study of diphtheria in "twenty representative American cities" by Crum [3] has shown the same irregularities, some cities in 1914 recording a diphtheria rate only one fifth as high as in 1900, some showing little change, while two cities had higher diphtheria rates in 1914 than in 1900. A committee of the Chicago Institute of Medicine in 1919 emphasized the existence of similar divergences.[4]

Geographic Divisions

1. *New England States*
   - Maine
   - New Hampshire
   - Vermont
   - Massachusetts
   - Rhode Island
   - Connecticut
2. *Middle Atlantic States*
   - New York
   - New Jersey
   - Pennsylvania
3. *South Atlantic States*
   - Delaware
   - Maryland
   - District of Columbia
   - Virginia
   - West Virginia
   - North Carolina
   - South Carolina
   - Georgia
   - Florida
4. *East North Central States*
   - Ohio
   - Indiana
   - Illinois
   - Michigan
   - Wisconsin
5. *East South Central States*
   - Kentucky
   - Tennessee
   - Alabama
   - Mississippi
6. *West North Central States*
   - Minnesota
   - North Dakota
   - South Dakota
   - Iowa
   - Nebraska
   - Missouri
   - Kansas
7. *West South Central States*
   - Arkansas
   - Oklahoma
   - Louisiana
   - Texas
8. *Mountain and Pacific States*
   - Montana
   - Wyoming
   - Idaho
   - Colorado
   - Utah
   - Nevada
   - New Mexico
   - Arizona
   - Washington
   - Oregon
   - California

With the aim of bringing the diphtheria situation in American cities to general attention and in the hope that methods found available for reducing diphtheria in one locality may be made familiar and be utilized in others, THE JOURNAL has undertaken an annual general survey of diphtheria mortality in American cities of more than 100,000 inhabitants, similar to the typhoid surveys published for several years past.

The sixty-eight cities here included are those having a population of more than 100,000 at the time of the U. S. Census of 1920 (fourteenth census). It has seemed useful to group them according to the recognized geographic divisions. Within each group, the

1. Cobbett: Lancet 2: 1457 (Dec. 3) 1898.
2. Jordan: Philadelphia M. J., Feb. 18, 1899.
3. Crum: Am. J. Pub. Health 7: 445, 1917.
4. Proc. Inst. Med. Chicago 2: 231, 1918-1919.

cities are arranged in order corresponding to the average rates for the four years 1920-1923.

The diphtheria death rates have been calculated on the basis of the population estimates of the U. S. Bureau of the Census, where these are available. The rate of population growth of certain cities since 1920 has been somewhat problematic, and the census bureau makes no estimates for the population of Detroit, Los Angeles, Seattle, Denver, Akron, Bridgeport, Houston and Spokane. For these eight cities we have employed the arithmetical method of estimation, recognizing fully that this method may involve a considerable degree of error for the years 1921-1923. The numbers of deaths for diphtheria used in calculating death rates have been in most instances those sent us by the local health authorities. In some instances, designated in the tables, we have used figures obtained from other sources. For three cities (Camden, N. J., Kansas City, Kan., and Kansas City, Mo.), local figures were not available for certain years, and death rates from the reports of the U. S. Census Bureau have been used.

In examining the tables and comments that follow, it should not be forgotten that diphtheria is primarily a children's disease, and that the age constitution of the population is therefore a factor in determining the crude rates used in this summary. It is not believed, however, that the general conclusions drawn from such figures would be seriously affected by the results of a more detailed analysis, although the rates of certain individual cities would doubtless be modified.

TABLE 1.—*Average Death Rates of Cities in New England States from Diphtheria (Including Croup) per Hundred Thousand Population*

	1920-23	1915-19	1910-14	1905-09	1900-04	1895-99	1890-94
New Haven	8.5	14.2	14.9	22.7	15.6	54.8	74.5
Cambridge	9.4	12.9	23.8	25.3	46.7	71.9	58.0
Hartford	13.0	13.8	25.3	28.1	38.8	47.8	120.9
Worcester	13.6	14.1	21.3	22.2	16.5	50.3	47.8
Springfield	15.4	24.9	19.1	31.3	29.6	51.2	68.2
Providence	16.2	29.3	26.8	30.7	41.2	53.5	55.3
New Bedford	18.3	17.0	20.9	22.6	25.1	53.6	20.0
Lowell	18.7	23.5	20.6	31.0	59.3	44.3	36.4
Boston	19.8	26.3	20.0	26.2	58.7	83.9	112.2
Bridgeport	20.1	23.4	23.3	26.8	34.2	63.9	79.3
Fall River	28.1	23.6	24.0	34.4	50.1	43.8	46.9

TABLE 2.—*Average Death Rates of Cities in Middle Atlantic States from Diphtheria (Including Croup) per Hundred Thousand Population*

	1920-23	1915-19	1910-14	1905-09	1900-04	1895-99	1890-94
Trenton	7.0	8.8	12.3	15.8	23.6	92.7*	80.7*
Newark	10.0	14.6	23.3	30.1	46.7	79.1	92.2*
Albany	12.7	10.4	20.0	31.6	26.9	....	....
Scranton	14.0	22.1	23.4	....	....	77.8*	48.6*
New York	14.5	21.8	28.0	40.0	58.0	85.8	134.4
Philadelphia	17.3	22.7	24.6	34.1	50.0	100.6	119.4
Yonkers	18.1	17.7	25.3	....	....	....	....
Paterson	18.2	13.5	16.1	25.5	52.9	111.8	145.4
Rochester	20.0	12.7	22.1	32.4	32.3	45.9	96.6
Jersey City	20.0	21.0	23.2	32.6	57.9	85.4	108.6
Camden	20.8	23.2	38.8	48.9	52.6	100.3*	194.0*
Pittsburgh	21.4	22.3	29.3	20.4	36.9	32.9	86.4
Reading	23.0	16.9	35.7	29.2	70.1	72.0	94.1
Syracuse	26.4	12.9	16.6	17.4	17.7	31.1	55.4
Buffalo	27.8	27.3	22.0	18.4	24.8	53.2	60.9

* Diphtheria deaths from Chapin's Municipal Sanitation.

The cities in the New England states (Table 1) have, for the most part, rather high diphtheria rates, the highest rate in any American city being registered in a city in this group (Fall River [5]). Hartford is the only one of the eleven New England cities to show a continuous decline in diphtheria for each quinquennium since 1890, although Cambridge and Bridgeport have records substantially as good. Two cities (Fall River and New Bedford) have higher diphtheria death rates for the four years 1920-1923 than for the preceding quinquennium.

The cities of the Middle Atlantic states (Table 2) have also for the most part relatively high diphtheria rates, seven of the fifteen cities having average rates of 20.0 or over for the four years 1920-1923, and only one (Trenton) an average rate below 10.0. New York City makes a remarkable showing in this group, maintaining a continuous decline throughout the thirty-year period, the percentage decline in the last four years being especially notable. Jersey City and Newark also show a steady diminution in each quinquennium for this period. Philadelphia, in which diphtheria seems to have been surprisingly high in the last decade of the nineteenth century, has likewise achieved a steady improvement comparable with that of New York. For shorter periods Scranton, Trenton and Camden have maintained uniform progress in the direction of lower rates.

Some cities, however, in this group have not had so satisfactory an experience. Seven cities (Rochester, Syracuse, Albany, Buffalo, Paterson, Yonkers and Reading) recorded a higher average diphtheria rate for the last four years (1920-1923) than they did in the quinquennium 1915-1919, Syracuse and Buffalo especially being considerably worse off in the proportion of diphtheria deaths than they were twenty years earlier.

TABLE 3.—*Average Death Rates of Cities in South Atlantic States from Diphtheria (Including Croup) per Hundred Thousand Population*

	1920-23	1915-19	1910-14	1905-09	1900-04	1895-99	1890-94
Norfolk	5.0	4.1	6.7	....	....	....	....
Richmond	9.2	5.8	7.0	9.8	24.4	17.6	39.7
Washington	11.4	11.9	6.9	11.2	23.5	50.9	77.9
Wilmington	11.6	15.2	18.0	27.8	50.9	84.9	83.8
Baltimore	12.3	13.5	14.2	16.1	33.0	68.1	70.0
Atlanta	14.0	10.1	12.5	14.2	11.1	10.5	8.8

The cities in the South Atlantic states (Table 3) show at the present time relatively low diphtheria death rates, although in the decade 1890-1899 both Baltimore and Washington were apparently more severely affected than Syracuse and Buffalo. Baltimore is the only city in this group to show uniform progress in the direction of a lower diphtheria rate. The 1920-1923 diphtheria rate in Richmond was considerably higher than for either of the two preceding quinquenniums, and in Atlanta the 1920-1923 rate was the highest for the whole thirty-four year period.

TABLE 4.—*Average Death Rates of Cities in East North Central States from Diphtheria (Including Croup) per Hundred Thousand Population*

	1920-23	1915-19	1910-14	1905-09	1900-04	1895-99	1890-94
Dayton	9.2	9.3	22.1	....	....	38.0*	116.0*
Columbus	9.6	7.6	12.1	10.5	11.6	....	....
Akron	11.9	18.9	27.8	....	....	....	....
Milwaukee	12.2	19.8	27.8	26.4	22.7	51.7	116.2
Cincinnati	12.3	13.2	13.9	17.0	17.3	37.3	103.7
Indianapolis	13.6	21.4	18.5	13.3	15.9	36.4*	97.3*†
Cleveland	16.2	20.0	24.6	20.8	42.6	45.3	95.7
Chicago	20.0	31.2	37.9	27.0	33.9	69.7	117.3
Youngstown	20.2	11.9	40.5	33.5	28.0	17.6	....
Grand Rapids	22.2	13.5	20.0	20.6	17.2	32.4	99.2
Toledo	25.5	14.1	25.4	20.4	56.8	34.6	89.3
Detroit	26.3	32.2	33.3	22.6	38.5	62.9	132.9

* Diphtheria deaths from Chapin's Municipal Sanitation.
† Data for 1891-1894.

Like the Middle Atlantic states, the cities of the East North Central states (Table 4) have relatively high

5. It is perhaps worth noting that the infant mortality rate in Fall River in 1920 was the second highest among registration cities with a population of more than 100,000 (Birth Statistics, 1920).

diphtheria rates, although there are some conditions that are difficult to understand, such as the disparity for the last decade between the rates in the two Lake cities of Milwaukee and Detroit. Cincinnati is the only city in this division to show uniform progress from quinquennium to quinquennium. Two Ohio cities (Columbus and Dayton) have had for ten years a consistently low average, but two others (Toledo and Youngstown) had much more diphtheria for 1920-1923 than in the preceding five years.

TABLE 5.—*Average Death Rates of Cities in East South Central States from Diphtheria (Including Croup) per Hundred Thousand Population*

	1920-23	1915-19	1910-14	1905-09	1900-04	1895-99	1890-94
Birmingham	5.8	7.2	8.3	....	....	....	....
Nashville	9.6	8.9	7.3	10.3	12.9	20.1	22.4
Memphis	9.6	11.2	11.9	13.4	6.9	10.0	28.5
Louisville	12.5	9.5	9.0	....	....	39.0*	49.6*†

* Diphtheria deaths from Chapin's Municipal Sanitation.
† Data for 1891-1894.

The cities of the East South Central states (Table 5) have had relatively low rates during nearly all the period covered by our figures. Both Louisville and Nashville, however, have apparently experienced a progressive increase in diphtheria deaths since 1910.

TABLE 6.—*Average Death Rates of Cities in West North Central States from Diphtheria (Including Croup) per Hundred Thousand Population*

	1920-23	1915-19	1910-14	1905-09	1900-04	1895-99	1890-94
Kansas City, Kan.	10.9	23.1	12.4*	....	....	....	....
Minneapolis	12.6	19.9	28.3	24.4	44.6	34.0	65.0
Des Moines	16.0	16.6	15.1	....	....	....	....
Kansas City, Mo.	17.0	22.8	15.7*	....	....	....	....
St. Louis	17.7	24.4	23.7	19.4	43.3	62.9	67.7
St. Paul	18.3	20.7	31.4	31.1	27.9	43.3	75.4
Omaha	26.1	35.8	15.8	24.5	20.5	28.2	82.9

* Data for 1912-1914.

The cities in the West North Central states (Table 6) have not much to boast of in their diphtheria mortality. Diphtheria in Omaha is apparently about as much of a menace now as it was at any time in the last twenty-five years. Since 1905, the diphtheria rate in Minneapolis has averaged less in each quinquennium than the rate in the neighboring city of St. Paul, the divergence in

TABLE 7.—*Average Death Rates of Cities in West South Central States from Diphtheria (Including Croup) per Hundred Thousand Population* *

	1920-23	1915-19	1910-14	1905-09	1900-04	1895-99	1890-94
Houston	6.6	6.1	7.8	10.5	....	....	....
New Orleans	6.9	11.6	19.6	10.2	11.5	17.1	51.3
Dallas	8.4	7.4	6.9	8.1	16.8	16.0	21.8
San Antonio	8.8	8.7	8.7	7.6	17.1	20.6	4.4

* Fort Worth reports that there are no records available.

the years 1920-1923 being particularly marked. In St. Louis, diphtheria has apparently remained at about the same level for twenty years, although during this period the rate in Philadelphia has been cut in two and in New York City reduced in still greater proportion.

The cities in the West South Central states (Table 7) have relatively low rates, but Dallas and San Antonio have apparently not made much progress in twenty years in reducing their diphtheria mortality. New Orleans, which had a very high rate from 1890 to 1894, has now one of the lowest rates in the country. Fort Worth is apparently the only city in this country with more than 100,000 population to have no record of diphtheria deaths, certainly an oversight in sanitary bookkeeping.

The two cities in the Mountain states (Salt Lake City and Denver, Table 8) show rather astonishing fluctuations in their quinquennial averages, Salt Lake City having a lower average from 1895 to 1899 than for any but one of the following five-year periods. Denver had an average diphtheria rate for 1920-1923 that was higher than any of the three preceding averages.

TABLE 8.—*Average Death Rates of Cities in Mountain and Pacific States from Diphtheria (Including Croup) per Hundred Thousand Population*

	1920-23	1915-19	1910-14	1905-09	1900-04	1895-99	1890-94
Seattle	6.3	5.5	5.2	12.5	31.8*	27.2†	....
Spokane	11.0	4.2	7.6	25.8	....	59.5†	18.1¶
Tacoma	11.4	7.7§	....	....	....	....	....
Portland, Ore.	11.4	6.0	12.3	12.2	20.2	....	....
Los Angeles	12.6	7.1	7.5	15.3	25.4	35.8	46.0
Salt Lake City	12.7	14.5	15.1	34.2	46.0	14.8	56.7¶
Oakland	19.0	8.1	10.3	16.1	29.1	....	....
San Francisco#	22.3	17.0	9.2	15.3	35.3	27.9†	82.8†
Denver	23.8	6.7	10.2	20.8	29.6	27.3	130.2

* Data for 1901-1904.
† Diphtheria deaths from Chapin's Municipal Sanitation.
¶ Data for 1895-1894.
§ Data for 1916-1919.
# The rates for San Francisco for the years 1900-1909, inclusive, were not available in the data sent by the department of health, and are taken from Crum's paper in the American Journal of Public Health 7:445 (May) 1917.

The cities on the Pacific Coast (Table 8) also show considerable fluctuations. There was evidently an excessive prevalence of diphtheria in the Pacific states from 1920 to 1923, all seven cities showing higher rates than for the preceding period. In most of the Pacific Coast cities, diphtheria seems still an important problem. Seattle, however, has had consistently low rates for fifteen years.

TABLE 9.—*The Ten Cities with Highest Diphtheria Death Rates for the Four-Year Period 1920-1923*

Fall River	28.1
Buffalo	27.8
Syracuse	26.4
Detroit	26.3
Omaha	26.1
Toledo	25.5
Denver	23.3
San Francisco	23.3
Grand Rapids	23.2
Reading	23.0

In comparing the cities with the highest and lowest diphtheria death rates in 1920-1923 (Tables 9 and 10), it is evident that in this period the diphtheria mortality was considerably lower in the cities in the Southern states. This difference is also evident throughout the period covered by our statistics, and is a reversal of the condition shown in typhoid fever, a disease that affects disproportionately the Southern cities. It is manifest that the Northern cities will have to make relatively greater effort than the Southern cities to overcome the

TABLE 10.—*The Eleven Cities with Lowest Diphtheria Death Rates for the Four-Year Period 1920-1923*

Norfolk	5.0
Birmingham	5.8
Seattle	6.3
Houston	6.6
New Orleans	6.9
Trenton	7.0
Dallas	8.4
New Haven	8.5
San Antonio	8.8
Dayton	9.2
Richmond	9.2

climatic disadvantage from which they suffer in respect to diphtheria. The steadily progressive decline in diphtheria mortality shown by a few Northern cities in the last thirty-four years is all the more noteworthy (Table 11). The remarkable record made by New York City in combating diphtheria may well serve as an object lesson to the rest of the country. It is tempting to conclude that the especially good record of several of the cities named in Table 11 is due to the example of the neighboring metropolis.

TABLE 11.—*Cities Showing a Continuous Decline in Diphtheria Death Rates by Five-Year Periods, 1890-1923*

Hartford		New York
Jersey City		Newark
Philadelphia		Baltimore
	Cincinnati	

It is perhaps somewhat misleading to begin the tables in this summary with the year 1890 instead of at an earlier date, since all of the diphtheria reduction since 1890 might conceivably be interpreted by some to be the effect of diphtheria antitoxin treatment. It should be remembered, however, that in many localities (Philadelphia and Cincinnati, for example) diphtheria was especially high about 1890, and that the average for 1890-1894 was considerably greater than for certain previous periods. In Chicago, the quinquennial average for 1870-1874 was 83.8 (including 139.3 in 1870), as compared with 117.3 for 1890-1894. Denver had a rate of 154 in 1891, and of only 28 in 1886. Epoch-making as the discovery of diphtheria antitoxin has been, it would not be legitimate to consider the difference between the 1890-1894 and the 1920-1923 diphtheria mortality as wholly a "saving of life" due to antitoxin treatment. It is impossible, however, to withhold from diphtheria antitoxin credit for the major share in the amazing improvement in diphtheria death rates portrayed in Table 12.

TABLE 12.—*Number of Cities with Diphtheria Death Rates of:*

	40 and Over	20 and Over	10 and Over	Under 10
1890-1894	49	49	51	2
1895-1899	32	48	55	0
1900-1904	18	42	54	1
1905-1909	2	35	54	3
1910-1914	1	38	51	13
1915-1919	0	22	50	18
1920-1923	0	17	32	16

The tabulated quinquenninal averages bring out clearly, perhaps nearly as well as if the data for individual years were used, the occurrence of more or less localized epidemics of diphtheria. It is plain, for example, that several cities on the Pacific Coast were much more severely stricken by diphtheria in 1920-1923 than in the preceding decade. Denver was also afflicted to an unusual degree during this period, the diphtheria rates in that city being about six to eight times as high in 1920 (23.2) and 1921 (14.8) as in 1915 (3.4) and 1916 (1.7). On the other hand, Springfield, Mass., had a rate of 52.9 in 1917 and 16.9 in 1921, while Chicago, which had a rate of 47.8 in 1917, had only 22.9 in 1919. In a general way, the period 1915-1919 was characterized by relatively increased rates in the New England cities, and the period 1920-1923 by higher rates in the Pacific and Mountain states. In 1915-1919, five of the eleven New England cities had a higher rate than in the preceding quinquennium, but in 1920-1923 all but two showed a decrease, as against 1915-1919; in eight Mountain and Pacific cities, this condition was reversed: only two showed an increase in 1915-1919 over the preceding quinquennium, but seven of the eight showed an increase for 1920-1923 as compared with 1915-1919. While the extreme fluctuations in diphtheria mortality observed prior to 1895 have not occurred in recent years, the existence of more or less pronounced epidemics is still apparent.

In the period since 1910, the decline in the diphtheria rate for the registration area of the United States (from 21.4 in 1910 to 17.7 in 1921) has not been nearly so great as the decline in the typhoid rate (from 23.5 in 1910 to 9.0 in 1921). The improvement in the typhoid rate has been brought about chiefly, if not wholly, by methods of preventing infection. For diphtheria we now possess a method of prevention and a means of cure, both of demonstrated effectiveness. A marked reduction in diphtheria mortality in the United States can undoubtedly be achieved in the next ten years by suitably directed organized effort.

New and Nonofficial Remedies

THE FOLLOWING ADDITIONAL ARTICLES HAVE BEEN ACCEPTED AS CONFORMING TO THE RULES OF THE COUNCIL ON PHARMACY AND CHEMISTRY OF THE AMERICAN MEDICAL ASSOCIATION FOR ADMISSION TO NEW AND NONOFFICIAL REMEDIES. A COPY OF THE RULES ON WHICH THE COUNCIL BASES ITS ACTION WILL BE SENT ON APPLICATION. W. A. PUCKNER, SECRETARY.

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Dosage.—The iodine content of oridine 1 Gm. is approximately equivalent to sodium iodide 0.28 Gm. and to potassium iodide 0.31 Gm. When used for the prophylaxis of goiter, 0.01 to 0.03 Gm. per day are given until 40 doses have been taken.

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$$X = \frac{.7527\ w + a - k}{293}$$

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SATURDAY, SEPTEMBER 20, 1924

DIPHTHERIA IN THE UNITED STATES

Readers of THE JOURNAL are familiar with the survey of mortality from typhoid fever in the United States which has been published each year; today American cities are proud of their records in controlling mortality from this disease. In this issue is published [1] a similar survey of the mortality from diphtheria in the large cities of the United States, grouped by geographic divisions. If our facts as to the cause of diphtheria, its prevention by the use of the Schick test and toxin-antitoxin, and its treatment by sufficient antitoxin given properly and early are correct—and they undoubtedly are—diphtheria is a preventable and controllable disease. It should have a low mortality wherever competent physicians are available.

There are, as will be seen from the figures published, marked differences both in the number of deaths from diphtheria in various communities and in the tendency of the mortality rate to increase or decrease. The highest diphtheria death rate in any American city is that of Fall River, which incidentally had the highest infant mortality rate among cities of its class during 1920. Only one city in New England has shown a continuous decline in diphtheria since 1890. While New York City has had a steady decline throughout thirty years, such cities as Rochester, Syracuse, Albany and Buffalo record a higher rate for the last four years than in the previous five-year period. Louisville and Nashville have experienced a progressive increase in diphtheria death rates since 1910. Omaha shows apparently no progress for twenty-five years, and Minneapolis far surpasses St. Paul in its attack on this disease. The diphtheria mortality rate is considerably lower in Southern cities, and this is believed to be definitely related to climatic advantages, since diphtheria is more likely to attack during periods of cold and rain.

The figures now made available are a challenge to every city in the United States which has a diphtheria mortality rate higher than the strikingly low rate of New York City. That community decreased from a rate of 134.4 in 1890-1894 to 85.8, and then gradually to 58, to 40, to 28, to 21.8 and for 1920-1923, to 14.5. This must be taken as an indication that the intensive campaign in the scientific control of diphtheria waged in that city has yielded substantial and encouraging results. That these results are not wholly fortuitous is shown by the fact that a continuous decline in mortality from this disease has also been shown by Hartford, Conn.; Jersey City; Philadelphia; Newark, N. J., Baltimore and Cincinnati.

The facts and the methods of control are available. It remains for the health officials and the physicians of cities which continue to have high death rates to show that similarly good results can be achieved by the intensive application of our scientific knowledge.

1. Diphtheria Mortality in the Large Cities of the United States, this issue, p. 918.

THE PROBLEM OF FATIGUE

Fatigue is a phenomenon experienced so frequently among men that a definition of it scarcely seems necessary. Work is succeeded by weariness in the daily life of most of us; and the mere reminder of "that tired feeling" is often sufficient to promote an interest in short cuts to recuperation. The problem of fatigue is one that concerns the employer of labor who may fail to secure a satisfactory day's output from his employee, if the activity of the latter is speeded up beyond a rate that is unduly fatiguing. The schoolmaster can make little satisfactory progress with fatigued school children; hence he must endeavor to avert conditions that demonstrably produce deterioration with respect to the ability to perform the tasks of learning. The physician rarely carries a patient through any considerable period of illness without receiving repeated reminders of what weariness as well as weakness means to the sick.

The textbooks glibly define fatigue as a more or less complete loss of muscular irritability and contractility, brought on by functional activity. Such a description could scarcely be expected to point the way to relief, for it fails to indicate the underlying causes that must be combated. The primary source of fatigue must lie in the performance involving the transformation of energy in the body, as there is no fatigue when all expenditure of effort is excluded. It is conceivable that the depletion of the stores of energy is responsible for fatigue; hence, the recuperating power of rest that permits restitution of the loss. Or, it has been proposed that fatigue results when the products of muscle metabolism accumulate during work faster than they can be removed from the contractile organs. This is the "waste product" theory of fatigue. Half a century ago, the German physiologist Ranke expressed the belief that, as a result of the chemical changes occurring in the muscle during contraction, certain substances are formed which depress or inhibit the power of contraction. In this category of products, lactic acid or lactates, carbon dioxid and acid phosphates—all known to

appear in muscles—have been included in the past. It is known, in fact, that the extent of the occurrence of some of these "fatigue substances" depends, in part at least, on the abundance of the oxygen supply to the muscles during their activity.

Far more startling was the announcement by Weichardt,[1] twenty years ago, that there are formed in fatigue not simply the usually accepted fatigue substances, but a more specific substance, a true "fatigue toxin," analogous to bacterial toxins, and that this is chiefly responsible for fatigue. Subsequently, he asserted that a comparable toxic product, kenotoxin, can be obtained from proteins by a diversity of chemical manipulations outside the body. The climax of the widely discussed investigations was reached in the alleged production of an antitoxin, antikenotoxin, for which a patent was issued by the U. S. Patent Office. Although there are experiments on record in which the spraying of a school room atmosphere with a 1 per cent. solution of the vague "antikenotoxin" was stated to have greatly increased the alertness and even the scholarship of the students, the reports lack confirmation, and Weichardt's scheme has been almost entirely forgotten. Strangely enough, much of this structure of hypothesis was built on a foundation of utterly unconvincing evidence. Weichardt observed a variety of untoward symptoms when extracts of the muscles of highly fatigued animals were injected into test animals. They included reduction in temperature, slowing of respiration, sleep and untimely death. Lee and Aronovitch [2] of the College of Physicians and Surgeons, New York, have demonstrated that juice from the muscles of non-fatigued animals exerts the same action as fatigue juice, both on animals and on excised muscles. The experiments thus fail to confirm Weichardt's assumption of the existence of a specific toxin of fatigue. With this collapse of a fundamental claim, the entire superstructure of hypotheses is demolished. For the present, we must continue to depend on rest as the best "antitoxin" to fatigue.

THE FORTHCOMING UNITED STATES PHARMACOPEIA

The committee elected in May, 1920, for the revision of the United States Pharmacopeia has practically completed its work, and the proofs for the revised text are now being read by the committee members. At the annual meeting of the American Pharmaceutical Association in Buffalo, August 25 to 29, E. Fullerton Cook, chairman of the Committee on Revision, reviewed the principal features of the new book. The responsibility for the scope of the new Pharmacopeia has been placed on the twenty-one physician members of the committee, so that the new edition should be more fully representative of the therapeutically valuable drugs, chemicals and pharmaceutical preparations than has been the case formerly.

The present Pharmacopeia describes 782 substances in the text; the new Pharmacopeia contemplates about 650. Of these, some are used only in manufacturing processes, while others represent different forms of the same remedy, so that the actual number of medicinal substances is much less than 650. Since about forty medicinal substances are to be added, the net change has resulted in the deletion of a considerable number of drugs that are little used or are of doubtful therapeutic value. Some of the additions are:

Proposed Latin Title	Proposed English Title	Similar Market Product
Acidum acetyltannicum	Acetyltannic acid	Tannigen
Acidum acetylsalicylicum	Acetylsalicylic acid	Aspirin
Aethylis aminobenzoas	Ethyl aminobenzoate	Anesthesin
Albumini tannas	Albumin tannate	Protan
Amidopyrina	Amidopyrine	Pyramidon
Argento-proteinum fortius	Strong silver protein	Protargol
Argento-proteinum mite	Mild silver protein	Argyrol
Arsphenaminum	Arsphenamine	Salvarsan Diarsenol
Barbitali sodium	Barbital sodium	Barbital sodium Veronal sodium
Barbitalum	Barbital	Veronal
Barii sulphas	Barium sulphate	Barium sulphate
Calcii iodobehenas	Calcium iodobehenate	Sajodin
Carbonei tetrachloridum	Carbon tetrachloride	Carbon tetrachloride
Carbromalum	Carbromal	Adalin
Chloramina	Chloramine	Chloramine-T
Dextrosum	Dextrose	Grape sugar
Dichloramina	Dichloramine	Dichloramine-T
Epinephrina	Epinephrine	Adrenaline
Neoarsphenaminum	Neoarsphenamine	Neosalvarsan Neodiarsenol
Oleum chaulmoograe	Chaulmoogra oil	Chaulmoogra oil
Paraffinum chlorinatum	Chlorinated paraffin	Chlorcosane
Phenobarbitalum	Phenobarbital	Luminal
Phenolsulphonephthaleinum	Phenolsulphonephthalein	Phenol red
Procainae hydrochloridum	Procaine hydrochloride	Procaine Novocaine
Quinidinae sulphas	Quinidine sulphate	Quinidine sulphate
Quininae aethylcarbonas	Quinine ethylcarbonate	Euquinine
Sodii diphosphas	Sodium diphosphate	Sodium acid phosphate
Spiritus frumenti	Whisky	Whisky
Spiritus vini vitis	Brandy	Brandy
Thyroxinum	Thyroxin	Thyroxin

It is significant that most of the additions are products of recognized therapeutic or diagnostic usefulness. Many of the preparations are already described in Useful Drugs, and a still larger number are included in New and Nonofficial Remedies. In many cases, too, the descriptions and standards in New and Nonofficial Remedies have been adopted for the new Pharmacopeia without significant changes. In response to the demand by the medical profession for standardized medicines, a larger proportion of substances in this Pharmacopeia are standardized by assay or by more rigid tests for impurities than in previous editions. Biologic assays have been greatly amplified. In the present Pharmacopeia, only two drugs (pituitary solution and cannabis) are required to be assayed biologically, although optional

1. Weichardt: München. med. Wchnschr., five papers, 1904-1906; Serologische Studien auf dem Gebiete der experimentellen Therapie, Stuttgart, 1906; Ueber Ermüdungsstoffe, Stuttgart, 1912. A list of Weichardt's numerous publications on the causation of fatigue down to 1912 may be found in the last paper. A shorter account of his work, with a bibliography, is given by Weichardt in Kolle und Wassermann: Handbuch der pathogenen Mikroorganismen, Ed. 2, 1913, **2**, second half, p. 1499. Later papers may be found in various German periodicals.

2. Lee, F. S., and Aronovitch, B.: On Weichardt's Supposed "Fatigue Toxin," Am. J. Physiol. **69**: 92 (June) 1924. Lee, F. S.: Additional Data Concerning Weichardt's Supposed "Fatigue Toxin," ibid. **69**: 101 (June) 1924.

methods are given for several others. In the new book, obligatory biologic tests are given for eight drugs and their preparations. These are aconite, cannabis, digitalis, epinephrin solution, ergot, pituitary solution, squill and strophanthus. Heretofore, one of the chief difficulties in the application of bio-assays has been the use of variable standards. In the new Pharmacopeia, this has been remedied. The committee has carefully defined and fixed the standard for each substance to be biologically assayed, and the Bureau of Chemistry of the U. S. Department of Agriculture has offered to furnish manufacturers with samples of the standardized preparation to be used in adjusting the activity of new lots. The acceptance of this service is optional with pharmaceutical manufacturers, but it is believed that most of them will take advantage of the opportunity, and that, as a result, the bio-assayed drugs of the market will have a uniformity and dependability not before attained.

With many of the useless or doubtfully valuable drugs eliminated, and with the addition of a number of substances of demonstrated therapeutic merit, the new Pharmacopeia will deserve greater support from the medical profession than has been the case with previous editions of the book.

HISTIDIN AND ITS DERIVATIVES IN THE BODY

From time to time, specific physiologic rôles that may be assumed by the different amino-acids that have of late acquired prominence in the biochemistry of the tissues and fluids of the body are being discovered. Most obvious is the association of cystinuria with the amino-acid protein derivative cystin when the latter fails of complete destruction in metabolism. Alkaptonuria has similarly become associated with the tyrosin complex of the albuminous substances; while the amino-acid tryptophan may become responsible for the production of indol and related compounds in the organism. When benzoic acid or its derivatives are ingested, the appearance of hippuric acid (benzoyl glycin) in the urine calls attention to the detoxicating effect of the amino-acid glycocoll. Many of the disintegration products of proteins fail to come to notice readily because they are so easily oxidized to simple end-products. The cyclic derivatives, such as those containing the benzene ring or "aromatic nucleus," offer, as a rule, greater resistance to such disruption.

The amino-acid histidin, which has a conspicuous position through its almost universal presence in combination in animal and plant proteins, and hence in protoplasm, contains a cyclic group, the so-called imidazol nucleus; in fact, it may be regarded chemically as imidazolyl alanin. Through the action of bacteria, a potent amin, histamin, may be formed; for some micro-organisms seem to have the capacity of decarboxylating histidin to histamin, and tyrosin to tyramin.

It has recently been pointed out[1] that this process, which also occasions amin production from other amino-acids, is thus a normal pathway in the catabolism of amino-acids in the intestinal tract which occurs side by side with deamination. Histamin (and probably also tyramin) is a normal component of the cecal and fecal matter of man, i. e., of the large intestine.

How such highly poisonous compounds as the proteinogenous amins could be harbored within the organism without producing symptoms of intoxication has not been easy to understand. When histamin is introduced directly into the circulation, a physiologic response is speedily evoked; yet the ingestion of the toxic amin in considerably larger amounts is not followed by untoward symptoms. When first introduced into the alimentary tract, histamin disappears very rapidly without evoking a marked pharmacologic reaction. When injected just outside the intestinal wall, on the way to the liver, a marked reaction is obtained. Koessler and Hanke,[1] who have investigated the problem in the department of pathology at the University of Chicago, are forced therefore to draw the inference that histamin may be rendered pharmacologically inert in its passage through the wall of the intestine. On this assumption, we are reminded, injury to the intestine might, under suitable conditions, lead to grave symptoms.

According to further studies of the Chicago biochemists,[2] although ingested histidin, particularly as it is furnished by the proteins of our diet, is almost entirely destroyed in metabolism, nevertheless small quantities of catabolites therefrom regularly appear in the urine, or at any rate imidazol-containing substances can be detected there. The daily output of imidazol complexes—we may call them "imidazols" for the sake of brevity—amounts to from 120 to 220 mg. The excreted imidazols are chiefly endogenous in origin. To a variable extent, however, the excretion of imidazols is dependent on the protein content of the diet. In pathologic conditions, the imidazol values seem to vary widely. Patients in a state of inanition excreted very small amounts of imidazols. Those suffering from nephritis, who showed a nitrogen retention in the blood, gave the lowest imidazol values. The excretion of imidazols was, in general, inversely proportional to the severity of the disease. According to Koessler and Hanke,[2] an imidazol excretion of less than 80 mg. on an adequate diet seems to indicate a definite impairment of the excretory function of the kidney. Values below 40 mg. suggest a very unfavorable state of the secreting renal tissue, in the sense of a partial loss of function through destruction. Evidently, the future may disclose various new signs of inadequate renal performance when the different components of the urine of health

1. Koessler, K. K., and Hanke, M. T.: Studies on Proteinogenous Amines, XXI, The Intestinal Absorption and Detoxication of Histamine in the Mammalian Organism, J. Biol. Chem. **59**: 889 (April) 1924.
2. Koessler, K. K., and Hanke, M. T.: Studies on Proteinogenous Amines, XVI, The Excretion of Imidazoles in the Urine Under Normal and Pathological Conditions, with Special Consideration of Nephritis, J. Biol. Chem. **59**: 803 (April) 1924.

come to be better known both qualitatively and quantitatively. Even now, we are assured that the determination of the imidazols in the urine promises to yield valuable information regarding the protein catabolism in disease and regarding the excretory function of the kidney.

Current Comment

ANGINA PECTORIS

The history of the study of the cause of angina pectoris parallels that of many other disease entities in one respect; namely, a search for some morphologic change as the background for their pathology. The paroxysmal attacks of pain so characteristic of typical angina are part of a clinical syndrome that is frequently brought to the attention of almost every physician. Consequently, the procedures for relief should be well conceived on a rational scientific basis. A recent writer has well remarked that the very multiplicity of the theories that have been promulgated in regard to angina pectoris is good evidence that there is no agreement in the profession regarding its cause. The old explanation postulating a sclerosis of the coronary arteries has largely been abandoned because the postmortem findings often fail to correspond with the theoretical expectations. Some students of the subject have assumed that spasm of the coronary arteries may bring about a deficiency in the blood supply of the myocardium and thus initiate the disaster. Still others, including some of the most ardent investigators of heart problems, hold that angina pectoris is due to irritation of nervous structures in the beginning of the aorta by the plaques of an aortitis, when a rise of arterial pressure produces stretching of the investing membranes. In contrast with such hypotheses, Reid [1] urges the abandonment of this mechanistic pathology, and presents the syndrome of angina pectoris as a functional condition in the same sense as are the arrhythmias. Bearing in mind that the attacks seem to be initiated as a rule by exercise, physical or mental, Reid has sought the characteristic causes in the physiologic changes induced by such activity, rather than in some special lesion in the heart. Ordinarily, during exercise there is a dilatation of the peripheral blood vessels, produced, as Reid and others believe, in large part at least, by the cooperation of the nervous system, probably by a reflex through depressor fibers in the vagus nerve. In this way normally there is a drainage of blood away from the heart, so that this organ is able to contract without unusual strain. According to Reid, the sequence of events in angina pectoris may be the failure of this reflex dilatation of the peripheral vascular bed, resulting in a sudden rise in pressure in the first part of the aorta and the cavity of the left ventricle. The heightened pressure in turn irritates the nervous connections, which respond by pain referred to the sternal region, the arm and the shoulder. Angina pectoris is a clinical entity, and one without morphologic features detectable after death. The essential difficulty, according to the latest hypothesis, is a failure of the protective mechanism of reflex dilatation of the peripheral blood vessels when the stress arises. It is easier to understand on this basis how the conventional therapeutic measures, such as the administration of nitrites or nitroglycerin, afford relief; for they bring about a prompt vasodilatation at the periphery and thus relieve the heart.

1. Reid, W. D.: The Mechanism of Angina Pectoris, Arch. Int. Med. 34:137 (Aug.) 1924.

FOOD RESIDUES AND DEFECATION

The thesis that adequate knowledge of the functions of the bowel is fundamental to proper understanding and rational treatment of constipation and the syndrome of malaise that frequently attends it requires scarcely any defense. The alimentary tract is a long tube; and in its reach of thirty feet or more, many different reactions can and do occur. How long do the food residues and other alimentary detritus remain in the gastrointestinal canal under ordinary circumstances? The offhand answer to this query will probably be given as twenty-four or thirty-six hours by most persons conversant with the physiology of the bowel. They will recall that various recognizable indigestible substances that are ingested can be detected in the feces on the day following their intake; and with his more refined and exact technic, the roentgenologist has discovered that only traces of a barium meal can be discovered as a rule after the first day or two. Several investigators [1] have lately alleged, however, that the current beliefs must be somewhat modified. Alvarez and Freedlander contend, for example, that the usual large amount of barium given with a small test meal acts like agar agar or liquid petrolatum and speeds up the progress of material through the bowel. Using small glass beads as indicators of the transport of alimentary residues, they have found that the rate of progress varies widely in normal, healthy persons. Under the conditions of their tests on man at the University of California, scarcely more than half of the ingested beads were passed by the end of the second day. Sometimes days or weeks elapsed before all the beads were recovered in the stools. No symptoms of disease were found in men and women who required a week or more to pass 70 per cent. of the beads. Furthermore, the California clinicians believe that fast rates, that is, an evacuation of 85 per cent. of the beads in twenty-four hours, are associated with the passage of soft, badly digested stools. The ordinary place of stasis is the colon. Consequently, when the latter is well emptied by defecation or a purge, no bowel movement should be expected or demanded soon after. A certain amount of distention seems to be essential for colonic contractions. Alvarez and Freedlander regard it as questionable, therefore, whether purgatives or laxatives that produce copious movements should ever be given oftener than two or three times a week.

1. Burnett, F. L.: Boston M. & S. J. 184:371 (April 14), 415 (April 21) 1921; Am. J. Roentgenol. 10:599 (Aug.) 1923. Alvarez, W. C., and Freedlander, B. L.: The Rate of Progress of Food Residues Through the Bowel, J. A. M. A. 83:576 (Aug. 23) 1924.

Association News

THE ATLANTIC CITY SESSION

Time and Place of the Seventy-Sixth Annual Session

The Seventy-Sixth Annual Session of the American Medical Association will be held in Atlantic City, May 25-29, 1925, the Board of Trustees having decided finally on these dates at a meeting held in Chicago, September 12-13.

Medical News

(PHYSICIANS WILL CONFER A FAVOR BY SENDING FOR THIS DEPARTMENT ITEMS OF NEWS OF MORE OR LESS GENERAL INTEREST: SUCH AS RELATE TO SOCIETY ACTIVITIES, NEW HOSPITALS, EDUCATION, PUBLIC HEALTH, ETC.)

CALIFORNIA

Plague-Infected Squirrels.—Two plague-infected squirrels were reported under date of August 8 in San Benito County. They were shot, July 19, about 12 miles west of Hollister.

Complaint Against Second Chiropractic Board.—Joseph A. Sanford, president of the Western College of Chiropractic, submitted to the attorney general, San Francisco, August 30, a complaint against the state board of chiropractic examiners, it is reported, alleging that members of the new board appointed by the governor, June 11, were unfit on account of the law requiring chiropractors to have practiced in California for three years before the act creating the board became effective. Sanford claims, it is reported, that there are ninety men in California legally qualified for membership on the board but that none of them has been selected by the governor.

Hospital News.—The San Francisco supervisors appropriated $10,000 for preliminary work on a new tuberculosis preventorium which will be built by the city of San Francisco west of Redwood City.——A new four-story hospital with a capacity of thirty-one private rooms and wards was recently opened at La Jolla.——Plans have been drawn for a 325-bed hospital in Los Angeles to be known as the Isabelle J. Norris Memorial Hospital; in addition to 325 general beds, there will be fifty maternity rooms.——Construction work on the first unit, costing $900,000, of the $2,000,000 hospital building for the California Lutheran Hospital, Los Angeles, will start soon.——Ground has been broken for a new Covina Hospital at Glendora, opposite the city park. It will cost about $25,000. ——Dr. Robert T. Williams, Monrovia, will construct a new $25,000 sanatorium.

COLORADO

Society News.—At the meeting of the Arkansas Valley Medical Association, at Hortense Hot Springs, August 2, Dr. Harold T. Low, Pueblo, was elected president for the ensuing year; Dr. Thomas A. Stoddard, Pueblo, vice president, and Dr. Tom R. Knowles, Colorado Springs, secretary. The midwinter meeting will be held in Colorado Springs.

The Truth About Glands.—Under the auspices of the Denver Medical Society, a series of free lectures was given in the Moray Junior High School, Denver, September 1, on "The Truth About Glands." The speakers were Dr. Tracy R. Love, secretary of the state board of health, Dr. Constantine F. Kemper, and Dr. William M. Spitzer, Denver. George A. Collins, superintendent of the new hospital of the University of Colorado was chairman and Dr. George W. Stiles, Jr., of the U. S. Bureau of Animal Industry, was in charge of exhibits.

DISTRICT OF COLUMBIA

Causes of Absences in Schools.—Through the courtesy of the superintendent of schools, Washington, D. C., a committee of the District of Columbia Public School Association, of which Dr. Louise Taylor-Jones was chairman, made a study of the causes of absences in fifteen public schools. The grade chosen for study was the 3-A grade, which changed midyear to 3-B, in which children are of the age when they first come under the compulsory school law. Absences from all causes were recorded from September 17, 1923, to June 18, 1924, for about 490 pupils. More than 70 per cent. of all absences were due to medical problems, and respiratory disturbances of various natures accounted for nearly 40 per cent. More than one-fourth of all absences were due to "the common cold."

ILLINOIS

Personal.—William D. Wrightson, Baltimore, formerly junior assistant sanitary engineer, U. S. Public Health Service, has been appointed health officer of the Quincy public health district.

Physician Indicted.—It is reported, Dr. William H. Zorger and Mrs. Charles Miller, both of Champaign, who were jointly indicted by the federal grand jury recently for conspiracy to violate the Harrison Narcotic Law, were arrested, September 5, on a bench warrant. Dr. Zorger, who was also indicted separately for violation of the Harrison Narcotic Law, was released under $4,000 bonds.

Baby Conferences.—More than 1,650 babies from fifty-one counties are scheduled to attend the State Fair Well Baby Conference this fall. This surpasses the registration of any previous year by nearly 500. Each baby will be given a careful physical examination by physicians of the state health department, and the most perfect specimens will receive awards. The state fair conference is but one of many conducted in the state since January and about 10,000 children have been examined.

Typhoid at Litchfield.—The outbreak of fourteen cases of typhoid fever recently at Litchfield occurred among persons who bought milk from a dairy two employees of which were typhoid carriers. Most of the victims bought milk from two local restaurants through which practically all milk produced by the dairy was sold. The state department of public health remarks that vaccination as a preventive for typhoid fever may cost from $5 to $10, but a case of typhoid fever costs usually from $200 to $300 and six or seven weeks in bed. Attention is drawn to the hazard of the raw milk business. Two years ago, in Kewanee, a dairyman who sold raw milk was put out of business when twenty-five of his customers came down with typhoid fever under conditions almost identical to those in Litchfield. More than thirty cities in Illinois, in the last two years, have adopted a model milk ordinance which practically requires pasteurization, and a number of other cities had previously adopted similar ordinances. The pasteurization of milk is therefore gaining in popularity among people in general and dairymen of the state.

Chicago

Annual Dinner.—The annual dinner, reception and dance of the Chicago Medical Society will be held Wednesday evening, October 15, in the grand ballroom of the LaSalle Hotel. Tickets are $3 per person. The name of the speaker for the evening will be announced later.

INDIANA

Public Meeting at Indianapolis Session.—At the public meeting of the Indiana State Medical Association at Cadle Tabernacle, Thursday evening, September 25, addresses will be given by Drs. W. A. Pusey, President of the American Medical Association; William J. Mayo, Rochester, Minn., and Hugh T. Patrick, Chicago.

Hospital News.—A sixty-bed addition to St. Paul's Hospital, Michigan City, will be completed about May 1, 1925. ——Dr. Fred G. McMitchell, Gary, will construct a new $50,000 hospital building at 2188 Massachusetts Street, which will accommodate twenty-five patients.——The new addition to Goshen Hospital, Goshen, will be opened about October 1.

State Conference.—At the Indiana State Congress of Charities and Correction in Newcastle, October 4-7, the theme will be "Mental Health and Social Welfare." In a comprehensive survey of eleven Indiana counties, it was found that 22 per cent. of the population were mental defectives, and that 90 per cent. of the cases admitted to the Hospital for the Insane were preventable. C. O. Holmes of Gary is president of the conference and J. A. Brown of the board of state charities, secretary.

Venereal Disease Clinics.—Marion County has appropriated $1,500 to the county health office for the equipment of a cooperative venereal disease clinic in the city of Indianapolis for the remainder of this year. This is part of a plan to establish a downtown clinic to be operated jointly by the state, county and city health departments, for the treatment of venereal diseases only. The director of the clinic at

Richmond recently resigned and a movement is under way to relocate that clinic in the downtown section of Richmond.

Chiropractic Trickery.—The bureau of publicity of the Indiana State Medical Association released to newspapers an article on hay-fever, a copy of which was published by the Fort Wayne *Daily News-Sentinel*, Fort Wayne, on the first page, August 16. Credit was not only given to the Indiana State Medical Association for the article, but various paragraphs were put in quotations. To the surprise of the editors and managers of the *News-Sentinel*, as well as of physicians, the last paragraph had been altered by a compositor, a chiropractic sympathizer, in the *News-Sentinel* office, so that it read: "Antitoxin and chiropractic adjustments are the latest remedies offered for the relief of hay fever sufferers." The manager and editor of the *News-Sentinel* have offered sincere apology.

Report of Publicity Bureau.—The actual work of the bureau of publicity of the Indiana State Medical Association began Jan. 1, 1924. The report to the house of delegates at the Indianapolis session covers, therefore, eight months ending August 31. An advisory committee to the bureau, consisting of the president of the Indiana State Medical Association, the chairman of the council, and the editor of the state medical journal, was appointed by the council. It decided to give to the public facts about scientific medicine, and items of about 800 words have been prepared for the newspapers, and one released each week. The news service is now used by 115 newspapers and ten periodicals, the combined circulation of which is more than 660,000. These articles are carefully prepared with the assistance of a trained newspaper man, and they are censored by members of the bureau and at least one authority on the subject in hand. Twenty-seven releases have been published. Publicity meetings have also been held whenever the county medical societies desired them. There have been fourteen meetings, with a total attendance of 2,330. It has been found that the success of publicity meetings depends largely on the interest of the local medical society and the amount of publicity given them. The bureau has engaged in other activities, but the committee is convinced that its most important work is to instruct the public in the fundamentals of medical science and education.

IOWA

Personal.—Dr. Edward C. Meggers, Prairie du Chien, Wis., has been appointed manager of the Clark Hospital at McGregor to succeed Dr. Henry H. Clark, who founded the hospital twenty-two years ago and now is retiring.

Physician Arrested.—Dr. Ada Fuller, Des Moines, was arrested, September 11, and placed in jail on a warrant charging her with the murder of Mrs. Bertha Munger of Waterloo, who died, September 7, as the result of an illegal operation, it is reported. Dr. Fuller had registered at a hotel in Waterloo under the name of Mrs. Ray Smith, which, according to her, is her rightful name, resumed after divorce from Fuller.

Circulating Medical Library.—According to the Des Moines *Register*, Iowa has the only state circulating medical library in the United States. It is three years old and still growing. In the first five months of this year there were 1,063 books loaned out of town (815 in the same period, the preceding year) to 716 physicians, or about 20 per cent. of the physicians in the state. In addition to loaning books to physicians for the cost of postage, the library furnishes bibliographies and literature.

KENTUCKY

Five Chiropractors Fined.—W. W. Harris, F. A. Huber, F. M. Roth, W. E. Green and J. H. Durham, chiropractors of Louisville, were each fined $50, September 1, for practicing without a license. They were arrested on warrants sworn to by the registrar of the state board of health.

Hospital News.—Plans are being made for the erection of a new $1,000,000 home for the Waverly Hills Sanitarium, Valley Station.——J. Ernest Shouse, who has been assistant superintendent of the City Hospital, Louisville, for about six years and acting superintendent for the last three months, has been appointed superintendent of the hospital by the board of safety, effective September 1.

LOUISIANA

Physicians Employed for Maternity Work.—Following the recent action of the legislature in accepting the provisions of the federal infancy and maternity act, Dr. Katherine Havard and Dr. Dorothy Edwards, New Orleans, have been formally engaged for this work.

MASSACHUSETTS

Diphtheria Deaths.—The bulletin of the health department of Boston, August, states that there have been 116 deaths from diphtheria in that city this year and that not one of the victims had been protected by toxin-antitoxin immunization; further, that nearly 5,000 cases of diphtheria have been reported to the health department since December, 1922, and that not one of the patients had been immunized.

Milk Control in Boston.—The milk regulations of Boston were amended, March 7, by the addition of Article 12, which requires the milk to be from herds which have been accredited by the federal government or herds which have been tested and are on the way to be accredited. The bacterial standard was reduced to 100,000 bacteria per cubic centimeter instead of 500,000. A survey of dealers who sold raw milk was made, December, 1923; and among thirty-one licensed dealers, three were selling certified and the herds of four others had been accredited. By March 15, six dealers had ordered pasteurizing outfits. By June 1, pasteurizing outfits were installed in four plants, seventeen herds had been tested, and three dealers, who were installing outfits, were held up by the inability of dairy supply houses to ship all equipment. By July 15, all herds had been tested and all outfits installed and in operation. Two hundred and six cows passed the test and 217 reactors were found, a percentage of reactors of 51.3 per cent. for the first test. Boston's milk supply is now 96.72 per cent. pasteurized.

MICHIGAN

Infantile Paralysis in Detroit.—It is reported that ten new cases of infantile paralysis were reported, September 3, making a total since August 1 of 122, of which twelve were fatal.

"D.P." Arrested for Forgery.—James Austen Newman, whom the Detroit Telephone Directory lists as a "D.P." and who, it is reported, was a psychotherapeutist with offices in the Book Building, Detroit, was arrested, August 30, in San Marcos, Texas, and held pending the determination of the validity of a draft for $75 on a Detroit bank. Newman is wanted, it is said, for passing two worthless $200 checks in Detroit and for passing a $200 worthless check in St. Louis. He claims to have been retained as an alienist to examine a woman in San Marcos, Texas, who is under indictment for killing three stepchildren.

Unreasonable Taxation.—The *Journal of the Michigan State Medical Society*, September, notes that the last legislature passed an "enactment, rider, joker or whatever you may please to call it" that requires incorporated organizations, not incorporated for profit, to make a triannual report to the secretary of state. For the privilege of making this report, the editor states, the organization pays a fee of $10 and a filing fee of $2. It is incumbent on county medical societies, among such other organizations as camera clubs, debating societies and literary societies which may be incorporated, to make this return and pay these fees.

MINNESOTA

State Medical Meeting.—The annual meeting of the Minnesota State Medical Association will be held at St. Cloud, October 8-10, under the presidency of Dr. Archibald MacLaren, St. Paul. Those desiring to reserve hotel accommodations should communicate with Dr. James H. Beaty of St. Cloud at an early date. The council will meet at 10 a. m. and the house of delegates at 2 p. m., October 8. The banquet this year will be omitted, Thursday evening being a "purely social affair."

MISSOURI

Hospital News.—The Methodist Hospital, Springfield, is having plans drawn for an addition that will cost $125,000. ——The Frisco Railroad Hospital at Springfield is being torn down to make room for a new $400,000 hospital building which will accommodate 100 patients.

Personal.—Dr. Frederick C. Narr, formerly of Pittsburgh, has become the director of the pathologic laboratories of the Research Hospital at Kansas City.——Dr. Watson Campbell, Kansas City, has resigned as pathologist of the General Hospital to accept a similar position at Dr. Arthur E. Hertzler's Hospital in Halstead, Kan.

Fifteenth Annual Dinner.—Dr. Charles R. Woodson, St. Joseph, entertained members of the Buchanan County Medical Society at the annual dinner at the Woodson Sanitarium,

September 3. The guests of honor were Dr. William A. Clark and Dr. Edward J. Goodwin, president and secretary, respectively, of the Missouri Medical Association.

MONTANA

Thyroid Enlargement in Montana.—A study of the prevalence of thyroid enlargement among school children in Montana during the school year 1922-1923 has been reported by Dr. Fred T. Foard, acting assistant surgeon, U. S. Public Health Service (*Public Health Reports*, September 12). Sections of counties in the Rocky Mountains and up to more than 100 miles east of them were selected in order to compare the prevalence of goiter in mountainous and nonmountainous districts. The study comprised the examination of 13,937 children. The data collected represent a minimum rather than a maximum prevalence of thyroid enlargement, for it includes only definitely enlarged thyroids. There were found 3,011 simple goiters, which is an incidence of 21.6 per cent. The children were of all ages from 6 to 20 years, and in 4,690 of them, carefully classified by sex, the goiter incidence among girls was 32 per cent.; among boys, 13.4 per cent., a ratio of 2.4 to 1. Children living in rural districts of Cascade County where water from wells or springs is used, had a greater incidence of thyroid enlargement than children living in cities and towns of Cascade County where public water supplies were derived from surface streams and imported vegetables purchased. The general rule in all counties in which the survey was conducted, with the exception of the city of Lewiston, was that enlarged thyroids were decidedly more prevalent in the isolated rural districts than in the towns and cities. The general rule in Cascade County was that the thyroid enlargement among children of the rural schools varied with the degree of isolation of the school district. It appears that simple goiter among Montana school children is so prevalent that it should be considered a public health problem.

NEBRASKA

Physician Sentenced.—According to the *Nebraska State Medical Journal*, September, Dr. John W. Parsons, a resident of Omaha for forty-five years, has been sentenced to the penitentiary for one year for violation of the Harrison Narcotic Law, and Dr. Frederick A. Edwards, Omaha, to the penitentiary for five years on a charge of performing an illegal operation. Dr. Edwards has made an appeal.

NEW JERSEY

Hospital News.—The board of directors of the Beth Israel Hospital, Newark, have announced that an audit of the recent campaign for the new building of the hospital shows that $1,845,607.20 was raised, or $345,607 more than the amount expected, and that although the campaign closed in June, a $5,000 contribution was recently received from New York. ——Plans have been completed for a group of buildings at the New Jersey State Hospital, Morris Plains.

NEW MEXICO

Human Anthrax.—Dr. R. F. Parks, health officer of Eddy County, has reported three cases of anthrax in human beings. The infection is said to have been acquired from jack rabbits.

NEW YORK

Personal.—Dr. William B. D. Van Auken, health officer of Watervliet for the last four years, has resigned and Dr. Charles A. Birmingham has been appointed to succeed him. ——Dr. Jeanneney of Bordeaux, France, expects to arrive in this country early in September to study our methods of dealing with the cancer problem.

Book Revised.—A new, revised edition of the "Baby Book" has just been published by the New York State Department of Health. A copy of the book is mailed to the mother of each baby whose birth is registered. Copies of the book will be sent to all nurses doing public health work in the state, to health officers, midwives and registrars, and on request to any physician or mother.

Site for Veterans' Hospital.—Surrogate George A. Wingate, Brooklyn, has been appointed chairman of a committee of three by the Veterans' Bureau in Washington to select a site for the neuropsychiatric hospital to be built in the district comprising New York, Connecticut and New Jersey. The other members of the committee are Dr. Thomas W. Salmon and Dr. Henry A. Cotton. The committee will report to Director Hines, who will make the final selection of the site.

Syracuse to Have Orthopedic Clinic.—Under the direction of the Milbank Foundation, an orthopedic clinic will be opened in the city of Syracuse to treat children who have been crippled by infantile paralysis. At a conference, August 26, of the city health commissioner with representatives of the state department of health, the original idea of establishing a clinic under the direction of the state was found impracticable, as there were no funds to finance the clinic. It was then decided that the Milbank Foundation, which is conducting a health demonstration at Syracuse for a period of five years, should establish the orthopedic clinic (THE JOURNAL, August 23, p. 620).

NORTH CAROLINA

Clinics for Crippled Children.—In a census recently taken by the State Board of Charities and Public Welfare, about 600 crippled children were found in the state. To date, eight clinics for crippled children, at which more than 400 children have been examined, have been held, the last at Fayetteville, September 4, under the direction of Dr. O. L. Miller, superintendent of the State Orthopedic Hospital. More than half of these 400 children have already applied for admission to this hospital.

Reward for Eye Specialist.—According to an advertisement in the Burnsville *Eagle*, warrants have been issued in Watauga and Yancey counties, and a reward offered for the arrest of a traveling eye specialist who claimed to be "Dr. J. W. Walker of Charlotte." Walker came through these counties recently, charging from $20 to $100 for the cheapest kind of glasses and promising to send from his hospital in Charlotte medicine which would perform almost miraculous cures. According to the notice, he has neither a state license nor is he registered in the county. He has a decided foreign accent, weighs about 200 pounds, is 70 inches tall, and has dark hair and eyes and a moustache.

Health Department Adopts Purely Preventive Program.—Beginning September 1, the department of health of Winston-Salem will devote all its energies and activities to a purely preventive program, leaving off curative treatment of any kind whatever. The general dispensary, which has built up a large clientele for diagnosis and treatment, has therefore been transferred to the City Hospital and will be handled by the outpatient department of that institution. The venereal disease clinic has been transferred to the City Memorial Hospital. Dr. Ward C. Curtis, city physician, will have his headquarters at the City Hospital instead of the department of health, and Dr. R. R. Jones, who recently joined the department of health, will devote all his time to health work in the schools and to communicable disease control.

NORTH DAKOTA

State Medical Election.—At the thirty-seventh annual meeting of the North Dakota Medical Association, Bismarck, September 10-11, the following officers were elected: president, Dr. William C. Fawcett, Starkweather; president-elect, Dr. John H. Rindlaub, Fargo; vice presidents, Drs. N. Oliver Ramstad, Bismarck, and Thomas Mulligan, Grand Forks; secretary, Dr. Alexander J. McCannel, Minot; treasurer, Dr. William W. Wood, Jamestown.

OHIO

Warrants for Ten Chiropractors.—It is reported that state authorities issued warrants, September 2, for ten chiropractors who were notified to appear in the municipal court of Akron to explain why they were advertising the practice of chiropractic in violation of the state law.

Bronze Tablet to Dr. Ransohoff.—At the entrance of the Jewish Hospital of Cincinnati, a bronze tablet has been placed, which reads:

"Joseph Ransohoff, M.D., F.A.C.S., LL.D., 1853-1921. Surgeon and teacher. Compassion and understanding were his and a deep love for all humanity. In the wards of this hospital where he gave of himself so unsparingly, the spirit of his service will live."

State Board Inspector Reports.—Frank Dorsey, inspector for the state medical board, caused the arrest of 174 persons in the year ending July 1 for violations of the health laws of the state, and convictions were obtained in all but thirty of these cases. Of the thirty cases, there were no trials in three, five persons left the state, eight trials were still pending, and thirteen were dismissed for various reasons. The fines imposed totaled $15,900; a part or all of the fine was suspended in some cases.

Accidents in Industry.—There were 933 fatal accidents in industry in Ohio for the year closing July 1, 1924, according

to the annual report of the chief of the division of workmen's compensation. This was an increase of 130 fatal accidents over the previous year. The total number of accidents in industry was 181,610, which was also an increase of 4,150. The premiums collected during the year amounted to $10,724,780.94, and the expenditure for compensation, medical services, etc., was $10,669,831.91.

Home Care of the Sick.—Owing to a scarcity of physicians in rural communities of Brown County and the high cost of competent nurses, women from seven townships have started a "Home Care of the Sick" project. Certain women from each community will be instructed in the care of the sick, and they subsequently will teach other women in their own communities. The work will be under the supervision of a "health specialist" through the County Extension Agent. At the organization meeting, Georgetown, September 16, meetings were scheduled for the remainder of the year for October 28, November 11, November 25 and December 9.

OKLAHOMA

Personal.—Dr. Dock Long, Duncan, has been appointed county health physician by the state health commissioner.——Dr. George W. Colvert, Miami, has been appointed city physician to succeed Dr. J. B. Lightfoot.——Dr. William F. Lunsford, Poteau, has been appointed full-time county health officer for Le Flore County under the Rockefeller Foundation plan and has been spending a month at Andulasia, Ala., to observe the health unit there.

PENNSYLVANIA

Hospital News.—Mercy Hospital, Pittsburgh, will celebrate the third anniversary of Mercy Day, September 24. Dr. Charles Mayo, Rochester, Minn., will be the guest of honor and will speak on problems of the thyroid gland and gallbladder. Dr. James I. Johnston will give a biographical sketch of the late Dr. Irwin Justus Moyer, and a dinner will be held at the University Club in the evening.——A fifty-eight bed addition will be erected to the St. Joseph's Hospital at Reading.——A new 300-bed hospital will be erected at Conemaugh Memorial Hospital, Johnstown.——The board of managers of the Memorial Hospital of Philadelphia, Roxborough, have requested Dr. Sigismund S. Goldwater, New York, to collaborate with the superintendent of the hospital in a survey and report of the immediate needs of the hospital in its future growth with particular reference to the erection of a maternity department.

State Medical Meeting.—At the annual meeting of the Medical Society of the State of Pennsylvania at Reading, October 6-9, 1924, Dr. William Allen Pusey, Chicago, president of the American Medical Association, will give an address following the presidential address by Dr. John Norman Henry. Dr. Pusey will also read a paper before the medical section on "The Present Situation in the Treatment of Syphilis," and will address the secretaries of the component county societies at a dinner in the evening. Among other guests at the general sessions of this meeting will be Dr. John O. Polak, Brooklyn, and Dr. William Engelbach, St. Louis; at the medical section, Dr. Thomas B. Futcher, Baltimore, Dr. Philip S. Hench, Rochester, Minn., and Abraham Zingher, New York; at the surgical section, Dr. John F. Erdman, New York City, and Robert E. Farr, Minneapolis; at the pediatric section, Dr. Charles H. Smith, New York, Dr. John A. Foote, Washington, D. C.; and at the eye, ear, nose and throat section, Dr. Ben Witt Key, New York. The Berks County Medical Society, which for about ten years has owned its own home in the city of Reading, will provide entertainment. At the public meeting, Dr. Chevalier Jackson will speak on "The Prevention of Certain Classes of Accidents in Children," and Dr. Woods Hutchinson on "Making Health Contagious."

SOUTH CAROLINA

Impostor Lands in Hospital.—Isaac William Nichols, who claims to be a "root doctor," was admitted to hospital in Sumter, August 25, with a broken arm and various contusions. It is reported that Nichols had been charging colored people for "medicines" which he said would make their desires come true. He told Mrs. Pippin that her husband intended to destroy her, then offered to sell for $2 "medicine" which would protect her from any harm. Requesting Nichols to wait until she went to the planing mill to get the money from her husband, Mrs. Pippin brought Mr. Pippin home. It was shortly after this that the "root doctor" was taken to the hospital.

TENNESSEE

State Laboratory Moves.—The state health commissioner, Dr. Charles B. Crittenden, has arranged to move the state laboratory, which heretofore has been in three widely separated localities, to the second floor of the food and drug department on Cedar Street, Nashville. Dr. William Litterer will be in charge of the laboratory.

TEXAS

Hospital News.—The old Blind Institute building in the eastern part of the city of Austin is being converted into a state hospital for the senile insane. The new hospital will be ready for occupancy the latter part of October and will accommodate about 750 patients.——Plans have been made to enlarge the General Hospital, Fort Sam Houston, by the addition of buildings of a permanent character, to a capacity for 600 patients. The plans include laboratory space and equipment to meet the needs of about 1,000 patients.

School for Sanitarians.—The Texas Association of Sanitarians will hold its second school of instruction in Houston, November 4-7, in cooperation with the state board of health and the city health department. Sponsored by the state board of health and with the cooperation of the University of Texas and the city of Austin, this association was organized to instruct sanitary inspectors in all phases of health and sanitation so that small towns not able to employ sanitary inspectors for special work would be able to secure a man who was generally acquainted with the health program. Dr. Arthur H. Flickwir, health officer of Houston, is president, and E. G. Eggert, of the state board of health, is secretary. No fee is charged for this course.

VIRGINIA

Typhoid at Clinchburg.—It is reported that a typhoid epidemic exists at Clinchburg, a lumber town in Washington County with a population of about 375. There had been, on August 25, forty-two cases of typhoid fever and one death. Nurses have been sent to Clinchburg under the supervision of the assistant supervisor of nurses in this state.

Personal.—Dr. Bathurst B. Bagby, acting health officer of Richmond, has been appointed chief medical inspector of the department of welfare and will assume his new duties, October 1. Dr. Bagby resigned as health officer of Henrico County, September 1.——Dr. George B. Young, formerly of Chicago and until recently in the U. S. Public Health Service, has been elected joint health officer of the city of Charlotteville, the county and the University of Virginia, and will assume his duties, October 1.

WASHINGTON

Cooperative Store for Diabetic Patients.—Following the suggestion of Dr. Elliott P. Joslin, Boston, who recently lectured in Seattle, a group of philanthropists in that city has by endowment made possible the establishment of a store to serve physicians and diabetic patients at a cost consistent with the circumstances of the patient. The store will be cooperative in policy and part or full charity will be extended where necessary. Space, without rental charge, has been given by the Virginia Mason Hospital, which will also furnish clerical supervision of the business. The store, operated by a student of the University of Washington, will be open to the public about three hours each weekday. The supplies handled will be insulin, food scales, Benedict's solution, hypodermic syringes and needles, special foods such as saccharin, soy bean flour, bran, celluflour and Indiacum, test tubes, medicine droppers, food tables, text books and quantitative pipettes. The store is open for business. No person will make any profit from sales and the price of supplies will be regulated by a sliding scale, designated as full price, discount, cost, part charity, full charity. Sincere appreciation is expressed in *The Bulletin* of the King County Medical Society for the benevolence of this group of Seattle citizens.

CANADA

Hospital News.—Plans are now being formulated for the construction of a children's hospital at Montreal, Que., to cost $1,500,000. The new institution is to be founded on a charter already in existence, that of the Children's Hospital of Montreal.

Public Health News.—There are only forty-eight patients in the Isolation Hospital, Toronto, Ont., according to a report recently issued by the medical officer of health. This

is a record in the history of the institution, as the number of patients usually averages 100. Ten of the forty-eight cases are diphtheria cases, which is also a new low record.

GENERAL

Tuition fees at Michigan.—Word from the University of Michigan Medical School, Ann Arbor, states that the list of fees furnished for publication in the Educational Number was erroneous and should have been given as follows: The fees for residents of Michigan are $180 per year for men and $175 per year for women, plus a matriculation fee of $25; for nonresidents an additional charge of $80 per year is made.

Annual Meeting of Negro Physicians.—At the nineteenth annual convention of the National Medical Association, at Newport News, Va., recently, the following officers were elected for the coming year: president, Dr. Michael O. Dumas, Washington, D. C.; president-elect, Dr. Walter G. Alexander, Orange, N. J.; secretary, H. Walker, New York; treasurer, Dr. J. R. Levy, Florence, S. C. This was the first time in fifteen years that the annual convention was held in the South. The next annual convention will be held in Chicago.

Cancer Handbooks.—The basis of the educational work of the American Society for the Control of Cancer is two handbooks, written by committees of experts. The medical handbook, recently rewritten, is an authoritative, condensed treatise on cancer, and through the cooperation of the commissioner of health of Massachusetts and the director of the New England branch of the American Society for the Control of Cancer, it will be distributed to every licensed physician in Massachusetts. The popular handbook of the society, also recently revised, is "What Everyone Should Know About Cancer."

Registration Areas.—There are three states listed as having unsatisfactory mortality registration laws based on the "county system" that are not in the United States death registration area. They are South Dakota, Nevada and Arizona. Efforts are being made to have every state in the vital statistics registration area before 1930. Seven states are classed as having laws "under trial," since the laws have not been in force long enough to bring registration up to 90 per cent. These states are New Mexico, Texas, Oklahoma, Arkansas, Alabama, West Virginia and North Dakota. There are three states classified as "unsatisfactory" for the birth registration area—South Dakota, Nevada and Arizona—and thirteen—Idaho, North Dakota, Colorado, New Mexico, Oklahoma, Texas, Missouri, Arkansas, Louisiana, Alabama, Tennessee, Georgia, Florida—which have laws "under trial."

Storing Roentgen-Ray Films.—The National Fire Protective Association has tentatively adopted regulations for the storage and handling of photographic and roentgen-ray nitrocellulose films. According to *Radiology*, the storage of unexposed films shall be in metal boxes or cans on shelves two feet above the floor, or in approved double wall cabinets vented to the outside air, and exposed films stored in hospitals and similar institutions shall be kept in vented cabinets or in a vented storage room. Among many specifications given for the vented cabinets and the vented stage rooms are these: (1) Smoking shall be prohibited in rooms where films are stored and in developing or similar work rooms, and conspicuous "No Smoking" signs shall be posted in prominent places; (2) no film shall be stored within two feet of steam pipes, radiators, chimneys or other sources of heat; (3) the use of portable lights on extension cords in storage rooms is prohibited.

American Aid for German Medical Science.—The total receipts of the American Aid for German Medical Science (THE JOURNAL, Nov. 17, 1923, p. 1702) amounted to $28,856.81. Of this amount, $22,379.32 was received as individual contributions from about 2,000 physicians, $2,359.19 was received from students of medical colleges, and $4,118.30 from medical and other organizations. According to the secretary of the committee, Dr. William F. Petersen, Chicago, the expense of collection has been met by members of the committee, so that the entire amount contributed has been used for the purpose specified. The auditors' report of this fund is on file at the headquarters of the American Medical Association. The disbursements from the fund were as follows:

Cash to Prof. Schwalbe	$26,484.20
Food shipments	2,010.00
Freight and express on clothing	258.70
Audit, collection charges, etc.	103.91
	$28,856.81

Statistics Concerning Liquors.—To meet a constant demand for information concerning transactions in intoxicating liquors, the Treasury Department compiled statistics in pamphlet form. There were in bonded warehouses at the close of the fiscal year, June 30, 1923, 43,029,117.8 gallons of spirits. There were withdrawn for export to England between June and October, 1923, a total of 28,841.6 gallons, and in the months of November and December, 1923, for export to Germany, a total of 33,667.5 gallons. The total number of prescriptions by physicians who held permits for this fiscal year was 11,268,469, which accounted for 1,347,573.36 wine gallons of whisky, 30,752.72 gallons of wine, 9,945.35 gallons of brandy, 8,173 gallons of gin, 2,156.9 gallons of alcohol, 2,015.2 gallons of rum and only 300.38 gallons of U. S. P. and N. F. preparations fit for beverage use. The tax collected on distilled and fermented liquors for the fiscal year ending June 30, 1923, was $30,358,085.63, and the cost of enforcement of the National Prohibition Act was $8,135,842.44. There are in this bulletin of the Treasury Department various other statistics concerning intoxicating liquors, and many formulas for the denaturation of alcohol and the purpose to which each formula is suited.

Death of Dr. Henry Kraemer.—Henry Kraemer, Ph.D., for eight years a member of the Council on Pharmacy and Chemistry of the American Medical Association, died at his home in Mount Clemens, Mich., September 10. Dr. Kraemer was born in Philadelphia, July 22, 1868. He graduated from the Philadelphia College of Pharmacy, 1889, from Columbia University, 1895, and received a Ph.D. from the University of Marburg, 1896. He was professor of botany and pharmacognosy at the School of Pharmacy, Northwestern University, 1896-1897; professor of botany and pharmacognosy, and director of the microscopic laboratory, Philadelphia College of Pharmacy, 1897-1917; professor of pharmacognosy, University of Michigan, Ann Arbor, 1917-1920, and director of the Kraemer Scientific Laboratory since 1920. From 1898 to 1917, he was editor of the *American Journal of Pharmacy*; from 1913 to 1921, a member of the Council on Pharmacy and Chemistry of the American Medical Association; and since 1900, a member of the committee on revision of the U. S. Pharmacopeia. Dr. Kraemer was president of the American Conference of Pharmaceutical Faculties in 1917, a member and fellow of many scientific societies and fraternities, an honorary member of the International Congress on Pharmacy, 1910, and of the British Pharmaceutical Conference in 1919, a corresponding member of the Société de Pharmacie de Paris, and the author of textbooks on botany and pharmacognosy.

Test of Right of Government to Limit Physicians' Prescriptions.—The recent filing of a civil action in the Supreme Court of the District of Columbia (*Phyles* v. *Blair, Comr.*) to test the right of the federal government to limit physicians in the number of liquor prescriptions, is the third suit of this character to come before the federal courts. The legal questions involved will finally be passed on by the United States Supreme Court. The suit filed in the District of Columbia will not be decided on until the October term of the court.

The two suits in the federal courts of other jurisdictions have been decided against the government. In *United States* v. *Freund* (290 Federal Reporter, 411) United States District Court of Montana it was held that: "The provision of the National Prohibition Act prohibiting physicians from issuing more than 100 prescriptions for intoxicating liquors in any period of ninety days is an arbitrary restriction on the number of patients a physician shall treat, or is an unreasonable mandate to malpractice in respect to some of them, and is invalid." The government has not appealed this case to the higher courts because it was based on information, and not indictment. In such cases no right to appeal rests in the government.

In the case of *Lambert* v. *Yellowley*, acting federal prohibition director, filed in the United States District Court, Southern District New York (291 Federal Reporter, 640) it was held that the Eighteenth Amendment to the Constitution "was designed to bring about prohibition of intoxicating liquors for beverage purposes, and not to put an end to its use for medicinal purposes." It further held that: "It being admitted that intoxicating liquor is a valuable therapeutic agent in treatment of certain known diseases, and that in such cases it is 'necessary' that more than a pint be administered in ten days, so much of the National Prohibition Act as prohibits physicians from prescribing more than such an amount within ten days is void, as 'necessary' at least includes that which is desirable, advisable and needful, if not indispensable."

In the last named case, the federal government has filed an appeal to the circuit court of appeals. The New York case is a civil suit to enjoin the federal prohibition director and might have been appealed directly from the district court to the United States Supreme Court if a constitutional question alone were at issue. Other questions, however, necessitate an appeal first to the circuit court of appeals, but the case is likely to be appealed finally to the United States Supreme Court.

The decision in June, 1924, by the United States Supreme Court *(Everard Breweries* v. *United States)* upholding the prohibition of the use of beer as a medicine will be largely depended on by government attorneys and anti-saloon league leaders as a precedent to control the litigation involving whisky medication. In that case the supreme court declared that: "The Constitution confers upon Congress the power to make all laws necessary and proper for carrying into execution all powers that are vested in it." The court further added, "We are unable to say that the provision of the supplemental act (on the subject of beer) is an arbitrary and unreasonable exercise of the power vested in Congress by the Eighteenth Amendment, or that it is not 'appropriate legislation' for its enforcement."

Prohibition leaders assert that grave abuses may occur if the limitation of the whisky prescriptions of doctors is removed. They point out that in the fiscal year ending June 30, 1923, physicians in the United States wrote 11,268,469 liquor prescriptions. An interesting fact is that two states, New York and Illinois, accounted for 5,807,560 prescriptions, or more than half of the number for the whole country. The question of limiting physicians by law in the number of prescriptions is argued by dry leaders in part as follows:

In 1921, 36,859 physicians had permits to prescribe liquor; in 1922 the number was 44,346; in 1923 the total number for the nation had arisen to 57,597. The prohibition leaders contend that there are two divisions among the medical profession as to the value of whisky. One group holds that the best therapeutic effect may be obtained by using alcohol with such medications as may be needed specifically; while the other group holds that the patient's attitude toward whisky makes it efficacious to administer alcohol in that form. Approximately half of the physicians of the United States do not prescribe liquor, and so do not enter the argument. More than half of the states prohibit entirely the use of whisky, brandy and wine for medicinal purposes, and twenty-nine of the states forbid the use of beer as medicine. Thus not only the federal law would have to be changed, but the laws of many states also, if present limitations are to be relaxed or removed.

LATIN AMERICA

Institute for Cancer Research in Peru.—The *Reforma Médica* announces that the National Cancer Institute at Lima was inaugurated recently by the president of the republic. Dr. Eladio Lanatta, a local physician who has been making a special study of radiography in the United States, has been placed in charge of the new institution.

Personal.—Dr. Guillermo Gastañeta, professor of surgery at Lima, was the guest of honor at a banquet tendered by the profession at Lima. The occasion was the twenty-fifth anniversary of his entering on the practice of medicine. Dr. Enrique Febres Odriozola was the toastmaster.——A portrait in oils of Dr. Garfield de Almeida was recently unveiled at the Hospital São Francisco at Rio de Janeiro in tribute to his long service as director. Another portrait was unveiled the same day at a second hospital with which he is connected.

FOREIGN

Restrictions Removed from the Practice of Medicine.—The *Schweizerische medizinische Wochenschrift* states that by a recent referendum the Swiss canton of Basel-Land voted in favor of throwing open the practice of medicine without restrictions. Our exchange adds "So this half of the canton seems to want to return to quackery again."

French Congress on Ophthalmology.—The French Ophthalmologic Society has announced that the next meeting, its thirty-eighth congress, is to be held at Brussels, May 11, 1925, and the following days. The program has not yet been made out, but information can be obtained from the secretary of the Société française d'ophthalmologie, Dr. R. Onfray, 6 avenue de la Motte Picquet, Paris.

Personal.—The French Academy has awarded one of the Montyon prizes to Dr. Rodiet, chief of the Ville-Evrard Asylum, for his manuscript "Reminiscences of an Army Medical Officer During the World War." He was in charge of all the medical and relief work for refugees and others in his district, and recorded his observations as a physician and psychologist. The work is to be published later.——The eighty-fifth birthday of Prof. B. Naunyn was celebrated recently. He is still continuing his research on diabetes and gallstones although he retired from academic work in 1904. He is soon to publish a volume of reminiscences.——A gold medal has been presented by the city of Zaragoza to Dr. Royo Villanova, professor of pathology, for his work as a physician, instructor and publicist.——Dr. Salas Vaca is governor of the province of Murcia, Spain, and he was recently tendered a banquet by seventy physicians of the province.——Drs. Decref and Tricharte have been appointed the delegates from Spain to the international congress on physical training, soon to be held in Denmark.——The *Medicina Ibera* relates that Dr. Ortiz de la Torre is retiring from the chair of surgery at Madrid, having reached the age limit, and his friends are planning an ovation in his honor.

History of Sanatorium Patients.—The Medical Research Council of England has published a report on the history of patients treated at the Frinley Sanitarium from 1905 to 1914. It was able to trace all but 343 of 3,400 patients treated during these years. At the beginning of the research it was discovered that about 1,400 patients had been lost sight of. Painstaking efforts, advertising in the press, a personal canvass at every known address, and a study of the returns of the registrar general, however, traced all but 10 per cent. of the patients. The large majority of patients discharged as "worse" died soon after discharge, about one half of the deaths occurring in the first year. In this report statistical evidence is found to support the opinion of clinicians that the earlier the stage when the disease comes under sanatorium treatment, the greater the chance of survival; 79.3 per cent. of the male patients, admitted to the sanatorium in the incipient stage, and 89.7 per cent. of the female, survived five years, the corresponding number of survivals after ten years being 65.2 per cent. and 85.2, respectively. Of those discharged as "worse," 93 per cent. were dead when the observations closed in 1918, and of these deaths 58 per cent. occurred the first year after leaving the sanatorium; 56.8 per cent. of the male patients who were moderately advanced cases on admission to the sanatorium were alive at the end of five years and 38.2 per cent. at the end of ten years, and 67.4 and 49.7, respectively, of the female patients.

Deaths in Other Countries

Dr. **Grall,** inspector general of public health in the French colonies, and consultant in the campaign in the Near East during the World War, long stationed in French China, Guiana and New Caledonia. He has published authoritative works on tropical diseases.——Dr. **Trégant,** Toulouse, victim of a mountain-climbing accident.——Dr. **Nicolás Ramirez de Arellano,** formerly professor of pathology and dean of the medical faculty of Mexico.——Dr. **M. Gross,** Locle, who represented the fifth generation of physicians in his family, aged 50.——Dr. **A. Chatelain,** rector of the University of Neuchâtel and consulting psychiatrist to the Préfargier asylum, aged 85. He was a writer on general literary topics as well as on medicine.

Government Services

U. S. Public Health Service

Dr. Joseph Goldberger has been directed to proceed from Washington, D. C., to Milledgeville, Ga., and return, in connection with pellagra investigations.——Dr. Roscoe R. Spencer has been relieved from duty in connection with the investigation of Rocky Mountain spotted fever at Hamilton, Mont., and assigned to the Hygienic Laboratory, Washington, D. C.——Dr. Lunsford D. Fricks has been directed to proceed from Memphis, Tenn., to Tuscumbia, Ala., and return, to confer with the county health officer regarding a case of leprosy.

Hospitals Authorized

Pursuant to the instructions of the Secretary of War, June 27, 1922, the organization of general hospital, organized reserves, No. 81 (Fifth Avenue Hospital Unit, New York City), evacuation hospitals No. 82 (St. Vincent's Hospital Unit, Portland, Ore.) and No. 83 (Good Samaritan Hospital Unit, Portland, Ore.) and surgical hospital No. 8 (McKeesport Hospital Unit, McKeesport, Pa.) has been authorized.

Foreign Letters

LONDON

(From Our Regular Correspondent)

Aug. 25, 1924.

Welfare of the Blind

A deputation from the National Union of the Professional and Industrial Blind received by the minister of health advanced reasons for objecting to the provisions contained in the Blind Persons Act amending bill, now before parliament. It was argued that it was neither necessary nor desirable to reduce the pensionable age limit from 50 to 30. It would place difficulties in the way of really effective training. Again, there were disabilities even greater than that from which the blind suffered. If the whole question of invalidity was gone into with a view to providing pensions for all such sufferers, then those blind persons who were laboring under additional physical and mental disabilities might properly come within the purview of such provisions; but the deputation questioned whether it was desirable to give a pension to a man at 30 to provide him with a minimum wage, and to ask the state at the same time to make a grant in aid of the continuity of his employment. The present system insured the cooperation of the voluntary system, municipal help, and state assistance, each performing its own distinctive functions and constituting a guarantee of permanence and stability. It was proposed to transfer the whole obligation to the county or county borough authorities and to refuse assistance to voluntary agencies. It was proposed also to establish the principle of a minimum wage, which local authorities would be required to provide. The blind themselves considered that, with the present machinery, they could obtain much better results and provide more substantially for their needs, while at the same time increasing the number of employable blind. The productive capacity of the average blind worker was not more than 50 per cent. of that of the normal artisan engaged in the same occupations, and when local authorities realized this they would naturally be reluctant to speed up methods of training when they knew that the economic value of those workers for whom such training was necessary would not be comparable with the monetary values they would be required to provide. Directions were indicated in which the Blind Persons Act, 1920, could be strengthened. First, the powers of municipalities should be enlarged in order that they might take effective necessary measures to check preventable forms of blindness; and, secondly, the act should be so amended and strengthened as to deal directly with the problem of mendicancy among the blind. It might be so amended as to provide that the registration authorities should periodically, say every three years, be required to satisfy themselves that none of the societies registered in their area have become redundant. Another deputation—from the National League of the Blind—also waited on the minister of health to urge acceptance of the bill. It pressed for the abolition of the voluntary system in connection with the welfare of the blind and the establishment of direct municipal and state control, urging that the wages of blind workers should be not less than those paid to the unskilled municipal laborer. It asked also that competent blind persons should have preference over seeing persons in the appointment of home teachers.

Health Ministers on Birth Control

Mr. John Wheatley, the minister of health, received a deputation from the Standing Joint Committee of Industrial Women's Organizations. It was urged that the teaching of methods of birth control at maternity centers should no longer be prohibited. In reply, Mr. Wheatley drew distinction between the question whether birth control was desirable and whether or not it should be taught in a particular place and manner. The question was highly controversial, and he doubted whether the working classes were really united on the subject. It seemed to him likely that if this subject were taught at maternity centers, many women, on account not only of religious but also of other objections, would be deterred from attending the centers. If it were true that women who were referred to private physicians or hospitals from the clinics were denied the knowledge which they were advised to get, he would see that such cases were investigated; but he must make it quite clear that while expressing no opinion at the moment as to the case for teaching of birth control, he was not prepared to agree to its introduction into maternity centers without the express authority of parliament.

Cotton Spinners' Cancer

Judgment has been given in a claim for compensation by an operative mule-spinner alleged to have contracted epithelioma of the scrotum in the course of his employment. The claim was made under the Industrial Diseases Act. The point was whether the disease was contracted in the course of his employment. The judge held that the applicant was entitled to compensation for injury by accident or disease arising out of and in the course of his employment within the meaning of the Workmen's Compensation Act. He thus summed up: 1. The applicant contracted the disease known as cancer of the scrotum. 2. The disease manifested itself for the first time while he was employed. 3. His employment brought him into contact with a moving bar, which caused friction close to the scrotum. 4. His employment involved his overalls near the scrotum being constantly sprinkled with liquid petrolatum. 5. This is an irritant. 6. The applicant, when at work, used overalls that could be easily penetrated by the oil. 7. The atmosphere in which he worked was humid. 8. Cancer of the scrotum is quite common among mule-spinners. 9. Combine Facts 1 to 7, and the conclusion is irresistible that there is a connection between the disease and employment. Judgment was given for $131, the respondents to pay the costs, and that the order would be for a declaration of liability on the part of the employers for the disease at any time hereafter.

This is regarded as a test case, and much importance is attached to the judgment, having regard to the fact that many more claims may depend on it. A claim has been made in the case of a cotton spinner who died two years ago from scrotal cancer, after having been out of the mill eight years, and has caused considerable alarm in Lancashire. The Operative Cotton Spinners' Amalgamation state that eighty-nine cases of scrotal cancer have been traced in their membership since 1920; of these, twenty-six have proved fatal. One hundred and forty-five cases of the disease have been traced by one of the inspectors of factories. An official of the Operatives' Insurance Section declares that nearly $9,000 paid by them in respect of this disease will have to be repaid under the foregoing judgment. It is, however, certain that, consequent on this claim, the judgment will be appealed against, and will be keenly contested. But the operatives are said to be much more concerned in securing attention to the prevention of the disease than in the question of compensation, necessary as this is to the dependents of sufferers.

Heating of Houses a Lost Art

In a letter to the *Times*, a physician, Dr. D. Fraser Harris, calls attention to the fact that the Romans warmed their houses by the pleasantest and most scientific method—that of heating the floors of the rooms by means of hot air, which passed continually below them. The hot air of the hypocaust,

besides warming the floors of the rooms of these one-story Roman villas, also heated the water for the bath. Medieval Europe lost this art; it forgot how to heat houses and it neglected to provide baths. On the cold earthen floors of the gloomy castles, rushes were spread, presumably to keep the feet of the lords and ladies warm, for the fire in the vast chimney of the banqueting hall must have been a most inefficient heater of that great apartment. If our feet are warm we are warm or, at least, comfortable all over, and if the floors are warm all is well, calorifically speaking, with the house. The small "open fire" of millions of small houses at the present day is an excellent ventilator, but a bad heater of the air of the room. The problem before the architect should always have been how to heat a room without neglecting to change its air—the essence of ventilation. The open grate is a wasteful and dirt-scattering source of domestic heat. When the building of houses is so much before the nation at the moment, it might be well to remember the efficient, clean, healthy Roman method of heating floors first.

Prohibition of Formaldehyd as a Food Preservative

The food preservatives committee of the ministry of health has issued an interim report on the treatment of chilled beef and other foods with formaldehyd. The committee points out that formaldehyd is a preservative substance which is inimical to life and to vital processes of all kinds; it is a powerful protoplasmic poison. When ingested, it exerts an irritant action on mucous membranes, and after prolonged use appears to cause inflammatory changes in the liver, and also in the kidneys. The effect is probably cumulative. All responsible traders are opposed to the use of this substance, there being an almost complete agreement among commercial and public health interests. The following conclusion is reached by the committee: "Having regard to the interests of the trader and of the consumer, we have no hesitation in recommending that the addition of formaldehyd or any of its derivatives to food or drink should be absolutely and specifically prohibited."

The Irish Problem

In previous letters, the difficulties that have arisen in the medical profession in consequence of the abolition of the Union and the establishment of the Irish Free State have been described. The minister for industry and commerce of the Free State has introduced a bill into the dail authorizing the general medical council, which sits in London, to continue the exercise of its jurisdiction in Ireland for a year, during which time it should be possible to have a proper authority established in that country if it was decided to remain separate from England or having full reciprocity with it. In the debate, the medical position was well described by Sir James Craig, a physician and member for Dublin University. He stated that a conference representing the Irish universities and licensing bodies had been held and had sent a report to the government pressing that no change in the present position should be made. There had been three courses open to the conference:

The first was the establishment of a separate medical council and medical register, with control of the medical examinations and physicians of the Free State, without relation to the existing council of Great Britain. Under this, physicians qualified and registered in the Free State would not be allowed to practice in Great Britain or its colonies. Medical students who had no hope of employment in the Free State would naturally seek to get qualified in England, Scotland or northern Ireland, so that they could be placed on the general register. To get on the colonial list they would have to apply to the privy council for recognition, and to the general medical council for registration. There were at least 1,000 medical students in the Free State, and they were spending $750 a year each; and if they were going to spend their money elsewhere on their education, a large sum of money would be lost to the Free State.

The second was the establishment of a separate medical council and a separate register for Ireland, and to seek to secure from the medical council of Great Britain a reciprocity similar to that which obtained between Great Britain and the colonies. It was not compulsory on the council to recognize all the institutions of the Free State, and it would be quite within its right to refuse to give recognition to certain licensing institutions. They had nothing to offer the English medical council for reciprocity to the Free State, and he did not think there was any doubt whatever that if they asked and were able to obtain reciprocity, so that all their graduates would be placed on the register, the colonies would come in and endeavor to claim similar reciprocity, and the general medical council had always set its face against that. The establishment of a general council and register here would cost a considerable sum of money, and physicians throughout the country would have to pay to run the council. As far as the distribution of those qualified in the Free State was concerned, on the register of 1922 there were 6,599 students who had qualified in the Free State, and of these there were resident outside of Ireland 52 per cent., resident in northern Ireland 12.5 per cent., and resident in the Free State 35 per cent.; so that more than 50 per cent. of the students who qualified in the Free State were living outside Ireland. The number of Irish physicians on the register was only 7 per cent., whereas the percentage of Irish representatives on the general medical council was twenty-one, so that they had at the present time a great deal more control than the number of physicians would entitle them to.

The conference was unanimous that it would be disastrous for any change to be made at the present time. It considered that the third proposition put forward would be the ideal thing, but would be very slow indeed to give up existing conditions unless perfectly satisfied that the reciprocity spoken of was assured before anything was given up. He had pleasure in supporting the second reading of the bill. The bill was passed.

PARIS

(From Our Regular Correspondent)

Aug. 22, 1924.

Kinematography in Relation to Medical Instruction

Drs. H. L. Rocher and G. Jeanneney, agrégé professors at the Faculté de médecine of Bordeaux and surgeons to the hospitals of that city, recently gave an interesting account of the use of the kinematograph in medical instruction. Since the first successful attempts to represent objects in movement by means of projection apparatus (1895), great progress has been made and the kinematograph has become a scientific instrument of immense value. The former type of apparatus which, in the time of Marey (1879), took twenty-four pictures has been improved so as to record 180 pictures a second (Noguès, a man jumping), 3,000 pictures (Bull, 1904; the flight of insects), and up to 50,000 a second in 1919 (Abraham and Bloch, ballistic phenomena). And, owing to the representation of objects magnified from 10,000 to 50,000 times, it has become possible to project vital phenomena in microorganisms or movements of cells. If we add color kinematography, kinematography *en relief*, and kinematography of sound, it will be seen that kinematography can, at present, completely reproduce all the manifestations of life: movement, *relief*, color, sounds. It is possible, then, to analyze phenomena when projected with diminished speed; to magnify them (microkinematography), and, finally, to synthetize extremely slow phenomena (germination, growth of a plant). In physiology, for example, one of the chief advantages of

the kinematographic method is the opportunity it presents to secure permanent records in place of fugitive observations; for instance, the pigeon whose cerebellum has been pierced and presents characteristic gyratory movements. Furthermore, once the results of such experiments have been made permanent through kinematography, it will be unnecessary to repeat so often the experiments and vivisections needed in the demonstration of courses. In surgery, the kinematograph makes it possible to reproduce with diminished speed delicate surgical operations, and to pause at particular features of the intervention. In connection with drill work in operative medicine, which falls, in France, in the summer semester, making it difficult to keep cadavers in good condition, the kinematograph enables us to economize in cadavers; the kinematographic demonstration will repeat as often as is desired the delicate operative movements without wasting the subjects on which the student, sure of the technic, which has been demonstrated and commented on several times in his presence, will perform the final operation. In orthopedics, the kinematogrph will allow us to study the diseases of the locomotor apparatus before and after treatment, the analysis of the patient's gait at diminished speed, and the rehabilitation of the maimed. The neurologic films will demonstrate to students the various clinical types of disease, such as chorea, tabes, multiple sclerosis and paralysis agitans. Instruction in hygiene will be furthered by films showing the purification of water supplies and the results of applying strict sanitary measures to a large city. In short, there is not a single branch of medical science or of clinical instruction that may not profit from kinematography, so vast is its field of application. In a previous letter, I referred to its use for instruction in dental operations (The Journal, March 8, 1923, p. 806).

The material equipment has already been supplied in certain of our facultés de médecine and would not be difficult to procure in the institutions where it is still lacking. The only difficulties in the way of an introduction of the method are the acquisition and utilization of the films. However, Rocher and Jeanneney state that, with few exceptions, the film should constitute a sort of review of the whole course, with pauses at the interesting points, and, if necessary, comments by the instructor and exchange of questions and answers. The instruction film proper will be reserved mainly for operative medicine, physiology and neurology, in which it appears almost indispensable. Taking this point of view, it will suffice for each faculté de médecine to have a small collection of films. The others can be borrowed either from a central kinematographic bureau, functioning as a division of the ministry of public instruction, in much the same manner as the bureau that supplies the primary schools and the army, or as a cooperative kinematographic society of the facultés de médecine. If these sources fail, the only thing to do is for the universities to purchase their own complete supply.

The Use of Hydrocyanic Acid to Rid Vessels of Rats

Dr. H. F. Schoefer, a naval health officer, presented recently, to the Société de médecine publique, a communication in which he discussed the grave accidents from intoxication that have occurred, of late, from the use of hydrocyanic acid to rid vessels of rats. He emphasized that the sanitary personnel that takes charge of the extermination of the rats should use great precaution to protect the members of the crew against intoxication, since accidents have occurred on American and Mexican boats, and elsewhere. One should not place too much confidence in the assertions of nautical engineers that bulkheads are water-tight and will not allow the passage of gas. During experiments with hydrocyanic acid to destroy the rats, the acid was found to penetrate the engine room just as if there were a free communication with the hold. Schoefer raises the question whether naval architects, whose present methods of control seem inadequate, would not find it practicable to utilize the wide diffusion of hydrocyanic gas to test the water-tightness of a ship's bulkheads, guinea-pigs being used as experimental subjects. In this connection, it may be well to note that, in addition to the sudden syncope resulting from the inhalation of hydrocyanic gas, there is a weak intoxication, which is not fatal. This fact deprives this product of much of its value, since its principal merit seems to reside in the suddenness and the marked toxicity of its action.

The Decrease in Mortality at Bordeaux

In a recent number of the *Journal de médecine de Bordeaux*, Dr. J. Vergely publishes some interesting statistics on the mortality of Bordeaux from 1876 to 1922, a period of almost half a century. For purposes of comparison he chose the years 1876, 1892, 1900, 1901, 1910 and 1922, as not being marked by any important social disturbance, the last year (1922) in particular being regarded as sufficiently removed from the influences of the war. Considered with reference to the total population of Bordeaux, the mortality for the years selected was:

Mortality of Bordeaux, Selected Years from 1876 to 1922

Year	Per Thousand Population	Year	Per Thousand Population
1876	29.2	1901	20.7
1892	24.9	1910	19.1
1900	23.5	1922	19.1

These figures evidence a constant decrease in mortality, which, in a period of forty-six years, was diminished by 10.1 per thousand of population. But it is especially mortality from infectious diseases that is rapidly decreasing, owing to the progress in public health administration. The mortality from a number of infectious diseases follows:

Mortality at Bordeaux from Certain Infectious Diseases, for Selected Years, 1876 to 1922

	1876	1892	1900	1901	1910	1922
Typhoid fever	74	90	41	32	32	11
Measles	27	26	15	9	34	16
Scarlet fever	10	8	4	5	6	1
Whooping cough	30	18	24	16	37	11
Diphtheria	128	96	40	44	17	16
Enteritis (children under 2 years)	327	305	220	212	188	177
Puerperal septicemia	37	30	10	9	5	11
Totals	633	754	344	317	319	243

It will be noted that there has been a considerable decrease in the mortality from diphtheria as the result of the use of antidiphtheric serum. Infantile enteritis causes still many deaths, but the number is constantly decreasing. Typhoid fever, which, around 1875, produced about seventy-five deaths annually, caused from 90 to 100 deaths in 1890-1892, at which time an epidemic prevailed. But since a water supply almost free from micro-organisms has been secured for Bordeaux, typhoid has not been claiming one fifth as many victims. It should be considered also that many of the typhoid fever patients treated in Bordeaux contracted the disease outside that city. Smallpox has practically disappeared from Bordeaux; in 1922 there was only one death from that cause.

Also the mortality from tuberculosis shows a notable decrease; in 1922 the total number of deaths from this disease was 532, as compared with 824 in 1876, which signifies a lowering of the mortality from 4.2 to 1.9 per thousand of population. From other forms of tuberculosis there were, in 1922, fifty-two deaths, as against 109 in 1901 and 306 in 1876. This noteworthy decrease in mortality from tuberculosis is due to the energy with which the antituberculosis crusade has been carried out in Bordeaux.

The mortality from cancer, on the other hand, is increasing. The number of deaths from this cause for the same selected years was:

Number of Deaths from Cancer in Bordeaux, Selected Years, 1876-1922

Year	Number of Deaths	Year	Number of Deaths
1876	205	1901	230
1892	212	1910	291
1900	224	1922	379

But the mortality from cancer is very irregular, and, in examining the statistics for the period from 1900 to 1922, Vergely noted that in 1904, 1905 and 1916 more deaths occurred than in 1922. However, since 1914, the number of deaths from cancer has never dropped below 300, while 1903 was the first year in which this figure was reached. There has been, therefore, an unquestionable increase in mortality from cancer. No doubt, a part of the excess mortality may be due to the fact that cancerous patients from the small towns and rural districts come to the city for treatment and die there, thus adding to the total number of deaths; but this factor will hardly suffice, in itself, to explain so marked an increase.

The Birth Rate of Large French Cities

The Alliance nationale pour l'accroissement de la population française has published a table showing the number of births recorded in the ten largest cities of France during the second quarter of 1924 and including a comparison with the corresponding period of 1921 and 1923.

Births in Principal French Cities, Second Quarter, 1921, 1923 and 1924

Cities	1921	1923	1924
Paris	13,640	11,824	11,657
Marseilles	3,087	2,959	2,765
Lyons	2,549	2,279	2,242
Bordeaux	1,475	1,258	1,198
Lille	1,383	1,093	1,070
Strasbourg	1,138	1,071	1,120
Nantes	1,009	830	791
Toulouse	803	757	713
Saint-Etienne	886	744	780
Le Havre	987	879	808
Totals	26,957	23,694	23,144

The total number of births in the ten cities mentioned was 550 less in 1924 than in 1923, and 3,813 less in 1924 than in 1921. The number of marriages in 1924 was 441 less in 1924 than in 1923 (16,016 in the second quarter of 1924, as against 16,457 in the corresponding quarter of 1923). As for the deaths, the quarter showed a decrease of 354 as compared with the same quarter in 1923 (20,201 deaths in the second quarter of 1924 and 20,555 deaths in the second quarter of 1923).

MADRID

(From Our Regular Correspondent)

July 30, 1924.

Kineplastic Surgery

Dr. G. Bosch Arana of the Buenos Aires Medical School recently lectured on kineplastic amputations at the National Academy of Medicine. He described the improvements by Sauerbruch. Dr. Bosch Arana explained how the muscles surrounding the bone are now kept vital, so that their contractile power may be used, thus allowing the employment of members otherwise useless. He recommended an extensive tunnel, covered by as much skin as possible. Trunk anesthesia is applied with procain to stop pain, although permitting contraction in order to show how much muscular tissue remains usable. Films were used to show the different steps of such amputations. After the muscle underneath this skin bridge has been isolated, the muscular flap is placed round the bridge and the flap is covered with the remainder of the skin. Healing is by first intention. Through the tunnel some rings are inserted; they are connected afterward with orthopedic appliances, which permit the patients a number of activities. Progress has consisted in completing the stump in one step, a modification adopted by Sauerbruch himself, and an increasing mobilization of the muscles, thus enlarging the capacity of the patients for work.

REHABILITATION OF CRIPPLES

The day after Bosch Arana's lecture, Dr. Decref spoke before the National Academy of Medicine on the National Institute for the Rehabilitation of Cripples. He discussed the solution given to this problem in different countries. Germany had anticipated the problem, creating institutions for the rehabilitation of workmen who had been victims of accidents in factories or mines. Decref thinks that these institutions should be under civilian control, since such accidents occur as the result of industrial activity. Even soldiers, on becoming incapacitated, cease to be service men, and their training should be governed by civilian principles. In France, where no such institutions were available before the war, their creation caused a scandalous exploitation. In order to avoid this, maimed soldiers were required to select their appliances before a special committee; but manufacturers dodged this difficulty by coming in advance to an agreement with patients, and dividing with them the extra amount paid by the government. Decref warned that something similar might happen in Spain. Incidentally, he attacked kineplastic operations, stating that the orthopedic appliances they require are really only for exhibition purposes. Among the thousands of patients using such devices, a few prove to be real virtuosos. These elaborate and expensive appliances are not actually used by workmen, who prefer simpler devices. All such appliances require rings, and the pressure under working conditions causes ulcers and dermatoses. Decref ended by protesting against the employment of army medical officers in such institutions, as their training and functions are altogether different. He also showed lantern views of the new National Institute for the Rehabilitation of Cripples.

PLASTIC AND RECONSTRUCTIVE SURGERY

Plastic surgery and kineplastic operations have attracted much attention here since the conflicting views expressed in Bosch Arana's and Decref's lectures. Professor Spitzy of Vienna described in the Madrid Medical School the progress attained in this modern field of surgery. Spitzy read his paper in Spanish, and Professor Recasens, the dean of the school, in introducing the Vienna professor, did not fail to emphasize this courtesy. The practice of speaking in Spanish, initiated by the roentgenologist Professor Sauer, has been followed by almost all the professors who have since come to Madrid. On behalf of Spitzy, it should be added that he is the one who has thus far shown the best knowledge of Cervantes' language. Dr. Spitzy stated that the Vienna Orthopedic and Rehabilitation Hospital under his direction had been established after the first few months of war, as the Austrian government realized immediately that the number of wounded men would be excessive. In effect, there have been as many as 3,600 patients at one time in the hospital. Dr. Spitzy has already performed more than 10,000 amputations. From this enormous experience he has derived some basic conclusions. The first and all important is that, in amputating, the surgeon must be as conservative as possible. He must try to preserve the largest possible amount of tissue, and therefore, skin, since this skin, with its exquisitive sensitiveness, lends itself to many important uses. A square inch of skin furnishes many thousands of functional

possibilities. There is no use in sacrificing, as done formerly, skin or tissue to create a stump to support a prosthesis. Appliances have no such sensitiveness as possessed by the skin.

Dr. Spitzy explained the many improvements in the amputation of different extremities, beginning with the fingers. Instead of the orthopedic holder formerly used to replace the thumb, real thumbs made out of rib bone are now substituted. The thumb should not be removed, even if paralyzed. One may create an artificial arthrodesis, introducing a needle for three weeks, thus forming a stiff thumb that may be used as an opponent to the other fingers. As to the fingers, they should be removed only when they are in forced flexion caused by scar lesions. Kineplastic operations in the forearm are contraindicated in workmen, unless both forearms have been mutilated. Orthopedic appliances now used are proper for intellectual workers, but not for manual laborers. Workmen need a stump as a support. In training these patients, they must be taught to replace the lost hand with the other one. In artificial hands, function occurs very far from the resting point of the appliance, and only simple devices are necessary to hold tools. Spitzy uses simple soft leather holders. In exhibiting patients provided with the so-called Krukenberg grasping fork, he said that, by the mere removal of some useless muscular masses, he had succeeded in covering both ends of the holder, i. e., the radius and the ulna, with muscle and skin. These forks or holders are very useful for workmen. In some cases he has tunneled the lower arm, inserting under the biceps, between this muscle and the bone, a tube-shaped skin flap from one side of the chest, still attached by a pedicle to the chest. After the free end unites to the skin wound in the outside surface of the arm, the other end is cut free, thus furnishing a skin bridge under the biceps. This bridge is used to insert an ivory roll, also tunneled, to permit the introduction of little steel bars, which will support an artificial arm. In joint synosteosis, his technic is very simple and efficient, as shown by a number of photographs. He chisels through the ankylosis, refills this opening with melted animal fat, preferably pig's, and in order to keep apart the soft parts, he resorts to bronze plates similar to those used by dentists. When the hand is preserved, but because of loss of the upper bones, a wrist-drop results, Spitzy ingrafts above it almost all the fibula. One patient of this type was exhibited. In making this kind of implantation, the inlay must fit snugly into the receiving bone. The transplanted bone must be provided with sufficient tissue.

Spitzy's lecture stressed two points: conservatism in the surgery of extremities and adjusting of the training of cripples to their future position in life. He praised highly the Institute for Rehabilitation of Army Cripples under the jurisdiction of the Spanish Medical Corps, and directed by Dr. Bastos, a medical officer. Spitzy spoke more fully on the same subject a few days later, in the National Academy. In a large series of slides he presented the orthopedic appliances used in his Vienna institute. As to elaborate appliances, he said they were Sunday luxuries, as cripples use them only when going out on Sundays and to greet ladies in the street. In the shops of the institute, they manufacture all kinds of appliances, both simple and elaborate ones, and the demand for the first is as a hundred to one contrasted to the latter. In this hospital they have treated 30,000 wounded and performed 10,000 amputations, 3,000 of which were in the upper extremities. Of course, this experience should not exclude kineplastic operations when indicated, especially when the patient does not depend on his labor for a living. In many cases Spitzy has seen the patients give up the supposed advantages of kineplastics and exchange his prosthesis for a simpler device.

BERLIN

(From Our Regular Correspondent)

Aug. 16, 1924.

Infectious Diseases in 1923

Whereas in the first half of 1923 there was a marked decrease in the incidence of notifiable diseases as compared with the first half of 1922, in the second half of 1923 there was such an increase in the reported cases of typhoid and dysentery that the prevalence of those diseases in 1923 was greater than in 1922. Quite in accord with the locally limited epidemic character of these two diseases, their incidence in 1923 varied greatly in different regions. The smallest number of cases of typhoid was reported from southern Germany, while the maximum developed in northern Germany. However, the regional differences in the incidence of dysentery were much less than for typhoid. The wider prevalence of dysentery was confined to Prussia (1.80 cases to 10,000 population), Hessen (1.40) and Saxony (1.23). In the remaining provinces, the morbidity remained far below the average for the empire (1.37). In addition to dysentery and typhoid, the only infection that showed an increase in 1923 over 1922 was rabies. The large number of bite injuries (1,271) points to the wide prevalence of rabies among animals, and there has been no recedence as yet. As for diphtheria and scarlet fever, while the records for 1923 showed still considerable improvement over 1922, the decrease was not so marked as in 1922 compared with 1921. While in both these diseases there was a decrease in the case incidence, a diminution in mortality has thus far been observed only for diphtheria. In puerperal fever, the decrease in the absolute number of cases in consequence of the coincident decrease in the birth rate was much greater than the decrease in the percentage of cases to the total number of births (49.7, 44.4 and 41.9 cases per 10,000 births in the years 1921, 1922 and 1923).

Case Incidence of the Notifiable Diseases in Germany Among the Civilian Population, 1921-1923

	Number of New Cases			Per 10,000 Population		
	1921	1922	1923	1921	1922	1923
Diphtheria	63,018	37,949	31,942	10.20	6.19	5.19
Scarlet fever	48,281	32,448	27,234	7.82	5.29	4.43
Typhoid	18,808	10,998	18,102	3.04	1.79	2.14
Dysentery	31,634	5,066	8,449	5.12	0.82	1.37
Puerperal fever	8,006	6,422	5,502	1.30	1.05	0.91
Bite injuries	.....	.....	1,271	....	....	0.21
Rabies	43	52	64	0.01	0.01	0.01
Trachoma	1,857	1,522	1,192	0.30	0.25	0.19
Cerebrospinal meningitis	666	1,022	1,149	0.11	0.26	0.19
Anthrax	80	129	108	0.01	0.02	0.02
Typhus	533	396	27	0.09	0.06	0.00
Trichinosis	16	110	25	0.00	0.02	0.00
Smallpox	668	215	17	0.11	0.04	0.00
Recurrent fever	58	31	4	0.01	0.01	0.00
Glanders	1	2	1	0.00	0.00	0.00

Psychology in Medicine

In an address entitled, "The Exaggeration of Psychologic Influences in Medicine," delivered before the Aerztliche Gesellschaft für Sexualwissenschaft und Konstitutionsforschung, Geheimrat Kraus took a strong stand against the exaggeration of psychic causes in the genesis, exacerbation and course of various diseases. While it is no doubt true that psychology will continue to maintain a place in medicine, one must not confuse the fundamental psychologic qualities of the mind with the bases of science in general and the special sciences. As long as physiology examined the living organism in accordance with the exact rules of the mode of thinking applicable to the natural sciences, our knowledge of and our power over the phenomena of life continued to increase in the same ratio as did the power of the natural sciences over inanimate nature. It must be regarded, therefore, as nothing less than a crisis in the development of the natural sciences that the physiologist, when he decides to delve into the most complicated relationships of living organisms to the external

physical world, instead of clinging objectively, as was his wont, to the connection between external manifestations and the reactions of the organism, suddenly begins to propound vague theories concerning inner phenomena in animals, after the analogy of his own mental processes. It is no less a crisis when the clinician, guided in the ultimate analysis, rather by mesmerism than by scientific psychology, in America by the way of Christian science or new thought, and in Europe through the paths of hypnotism, suggestion and psychanalysis, reaches the point at which he feels compelled to regard supposedly pure psychic processes as causes of disease.

In opposition to such aberrations, Kraus recommended a return to an exclusively objective study of the relationships of the external world and the organism and the determination of the essential and fundamental union or connecting link between the two as consisting of relations taking place purely in accordance with natural laws to be discovered through observation, experiment and cogitation. Biology, he brought out, should view certain problems in the natural sciences, especially objectivity or external reality, from a somewhat different angle than usual. With regard to the history of the two ideas "subjective" and "objective" and the present status of the theory of objectivity, Kraus referred his hearers to the modern criticism as represented by the Marburg school and to the literature of objective idealism as set forth in the writings of Mach, Poincaré, Prantl, H. Cohen, G. Cantor, H. Rickert, E. Husserl and F. Kuntze.

Kraus emphasized that, to his mind, it was an error to hold that, by means of objective conceptions gained directly through observation, the most we can hope to accomplish is to produce cumulative, catalogue-like surveys or cross-sections of what we find in the external world (for example, a list of the warm and cold points on the skin or a number of reflexes), but that we can never take the accumulated isolated facts and develop a real definition or generality that will take account of the data discovered and those yet to be determined.

After discussions in the realms of mathematics and physics, Kraus took up physical chemistry. From time to time, man is inclined to indulge in speculations as to the origin of life, the source of living matter or force, and other unsolvable problems. Through study of the natural sciences, we come in contact with the earliest manifestations of life. Through the operation of certain factors (reductive power of the living substance, evolution of carbonic acid, vegetative electrolytic currents and concomitant electric phenomena) certain electric processes (for instance, in the germinating seed) that are the concurrent phenomena of the first stirrings of life are observed before chemical reactions or the microscope reveal any other physiologic processes. On the basis of their conjoint researches, Kraus and Zondek are convinced that the most important motive power or force acting on the body fluids and tissue substances to move them is internal pressure (turgor), which is a tangible quantity that can be measured. As this is mainly a matter of water distribution and of alternate charging of the marginal surfaces in the structure of the living mass with two antagonistic sorts of ions, we may substitute for this tonus simply "electrolytic turgor." From this point, Kraus develops the idea further, up to the problems of consciousness. He is prepared to be accused of thrusting psychology to one side only to admit it again in the form of symbolic reflexes. If the world consists of formed, individualized substance; if the formation process is as much a reality as is the general law that unites all forms, then, he feels, the psychologic problem has been sufficiently eliminated or thrust back. As Kraus views it, natural laws are but the operation of the "ideal" content of natural phenomena. The succession of all physical and psychic events becomes to him a purely logical arrangement.

Marriages

ROGER SIMMONS COUNTRYMAN, St. Paul, to Miss Dorothy Trapp of New Westminster, B. C., Canada, September 3.

ALVAN AVERY ROSENBERRY to Miss Helen Platt, both of Benton Harbor, Mich., at Niles, August 21.

ALBION VICTOR OHLSON, Kane, Pa., to Miss L. Elizabeth Jones of Plymouth Meeting, Pa., August 6.

LUCIUS GASTON GAGE to Miss Margaret Elizabeth White, both of Charlotte, N. C., August 16.

ARTHUR J. CASSELMAN, Camden, N. J., to Miss Lulu May Boyd, of Rochester, Minn., July 21.

PAUL ROSCOE HOLTZ to Miss Irene Martha Jacobson, both of Wheatland, Wyo., September 6.

ARTHUR MILLS CORWIN to Mrs. Marion Dwyer, both of Chicago, at Joliet, Ill., July 21.

WILLIS W. LASHER to Miss Ethyl Gaffney, both of New York, August 26.

IRA OSCAR PARK to Miss Julia Embry, both of Union City, Tenn., August 9.

JOSEPH ELMER O'BRIEN to Miss Mae M. Getz, both of Erie, Pa., August 14.

Deaths

Edward John Mountain ⊕ New York; University of Vermont College of Medicine, Burlington, 1898; lecturer and for eleven years instructor in orthopedic surgery at the New York Post-Graduate Medical School; on the staffs of St. Mark's Hospital, and the New York Policlinic Medical School and Hospital; aged 58; died, September 1, of coronary sclerosis.

Joseph Arthur Goodson, Lexington, Ky.; Vanderbilt University Medical Department, Nashville, Tenn., 1899; member of the Kentucky State Medical Association; for nine years superintendent of the Eastern State Hospital for the Insane; formerly Webster County physician and health officer; aged 49; was accidently drowned, August 29, while bathing in his home.

William Taliaferro Brown, Burnt Mills, Md.; University of Virginia Department of Medicine, Charlottesville, 1891; College of Physicians and Surgeons, Baltimore, 1892; member of the Medical and Chirurgical Faculty of Maryland; president of the Montgomery County Medical Society; aged 60; died, September 1, of heart disease.

Randolph Bryan Carmichael ⊕ Washington, D. C.; Jefferson Medical College of Philadelphia, 1889; professor of dermatology at the George Washington University Medical School, Washington; member of the American Dermatological Association; aged 55; died, September 3, at Fredericksburg, Va., of cerebral hemorrhage.

Arthur Herbert Kimball ⊕ Washington, D. C.; Johns Hopkins University Medical Department, Baltimore, 1902; member of the American Academy of Ophthalmology and Oto-Laryngology and the Washington Society of Ophthalmologists and Otologists; aged 49; died, August 24, of uremia.

Joel Brown Woodhull, North Bennington, Vt.; Medical Department of the University of the City of New York, 1884; member of the Vermont State Medical Society; aged 70; died, August 30, at the Putnam Memorial Hospital, Bennington, of cerebral hemorrhage.

Carlisle Johnston, St. George, S. C.; Gate City Medical College, Texarkana, Texas, 1903; member of the South Carolina Medical Association; formerly mayor of St. George; aged 43; died, August 22, at a hospital in Charleston, following an operation.

Julius Caesar Rappold, Jr. ⊕ Brooklyn; Medical Department of the University of the City of New York, 1890; member of the American Association for the Advancement of Science; aged 54; died, September 5, of cerebral hemorrhage.

John F. Feick, Reading, Pa.; Jefferson Medical College of Philadelphia, 1872; member of the Medical Society of the State of Pennsylvania; past president of the Berks County Medical Society; aged 72; died, August 24, of arteriosclerosis.

Israel M. Slingerland, Fayetteville, N. Y.; Albany Medical College, 1883; member of the Medical Society of the State of

New York; for fourteen years president of the board of education; aged 68; died, August 9, of heart disease.

Mahlon L. Pearson, Aberdeen, Wash.; Medical Department of the University of the City of New York, 1879; aged 73; died, July 6, at the Western Washington Hospital for the Insane, Fort Steilacoom, of exhaustion.

Silas Metz Hazlett, Allensville, Pa.; Jefferson Medical College of Philadelphia, 1897; member of the Medical Society of the State of Pennsylvania; aged 53; died recently, of carcinoma of the liver and intestine.

Mathew Harris Echols, Wills Point, Texas; Kentucky School of Medicine, Louisville, 1891; member of the State Medical Association of Texas; aged 67; died, August 26, at San Antonio, of heart disease.

Franklin Newton Staub, Pittsburgh; Jefferson Medical College of Philadelphia, 1874; aged 71; died, August 27, at the Western Pennsylvania Hospital, of injuries received when struck by an automobile.

Henry C. Dial, Gilmer, Texas; University of Louisville (Ky.) School of Medicine, 1886; member of the State Medical Association of Texas; aged 66; died recently, at Dallas, of cerebral hemorrhage.

Francis Irwin Welch, Newman, Ga.; Medical Department of the University of the City of New York, 1877; aged 72; died, August 23, of a self-inflicted bullet wound while suffering from ill health.

Henry C. W. Showalter, New Holland, Pa.; Jefferson Medical College of Philadelphia, 1883; formerly president of the board of health; aged 63; died recently, of cerebral hemorrhage.

John A. Woodley, St. Matthews, S. C.; Baltimore (Md.) University School of Medicine, 1887; member of the South Carolina Medical Association; aged 59; died suddenly, August 19.

Bascom H. Vaughan, Hillsboro, Texas; University of Alabama School of Medicine, Tuscaloosa, Ark., 1876; member of the State Medical Association of Texas; aged 73; died, August 1.

James Walter Ferguson, West Salem, Ohio; Cleveland University of Medicine and Surgery, 1876; formerly mayor of West salem; aged 73; died, August 22, following a long illness.

Albon S. Fichtner ✠ Johnstown, Pa.; College of Physicians and Surgeons, Baltimore, 1882; formerly member of the board of health; aged 66; died, August 24, of mitral regurgitation.

Flora Isetta Harbaugh Barnett, Chicago; Northwestern University Woman's Medical School, Chicago, 1892; aged 61; died, August 30, at St. Vincent's Hospital, Belleville, Ill.

William Francis Jones, McCook, Neb.; Miami Medical College, Cincinnati, 1900; formerly mayor of McCook; aged 50; died, August 23, at Windsor, Colo., of heart disease.

James Hopkins Pake, Bainbridge, Ohio; Starling Medical College, Columbus, 1883; member of the Ohio State Medical Association; aged 67; died, August 23, of heart disease.

John R. Persons ✠ Seattle; Northwestern University Medical School, Chicago, 1901; aged 48; died, August 23, at the Seattle General Hospital, of cerebral hemorrhage.

Joseph Pierre Desrosiers, Colfax, Calif.; University of Montreal Medical Faculty, Montreal, Que., Canada, 1906; aged 42; died, August 3, of cerebral hemorrhage.

Clifton McKinney Walker, Westminster, S. C.; Atlanta (Ga.) Medical College, 1891; member of the South Carolina Medical Association; aged 58; died in July.

Charles C. Van Waters ✠ Ogdensburg, N. Y.; Medical Department of the University of the City of New York, 1879; aged 69; died, August 25, of arteriosclerosis.

Newton D. Ray, Woden, Iowa; State University of Iowa College of Medicine, Iowa City, 1889; aged 69; died recently, of heart disease and arteriosclerosis.

William A. McGeehan, Leechburg, Pa.; University of Wooster Medical Department, Cleveland, 1873; aged 77; died in June, of cerebral hemorrhage.

William C. Kreul, Milwaukee; Milwaukee Medical College, 1901; aged 50; died in August, at the Sacred Heart Sanitarium, following a long illness.

John W. McCarley, Memphis, Tenn.; University of Louisville (Ky.) School of Medicine, 1881; aged 67; died, August 11, of angina pectoris.

Noah S. Wood ✠ Greencastle, Ind.; Central College of Physicians and Surgeons, Indianapolis, 1884; aged 65; died, August 9, of angina pectoris.

John Francis Cremin, New York; Dartmouth Medical School, Hanover, N. H. 1891; aged 65; died, August 20, of injuries received in a fall.

William N. H. Folk, Tillman, S. C.; Medical College of the State of South Carolina, 1884; aged 64; died, June 27, of carcinoma of the stomach.

Josiah A. Jones, Monticello, Ky.; Bellevue Hospital Medical College, New York, 1867; Confederate veteran; aged 85; died recently, of senility.

Jesse B. Paschall ✠ Fulton, Ky.; Washington University Medical School, St. Louis, 1909; aged 42; died, August 22, at Louisville, of uremia.

Charles Martin Sleeper, South Berwick, Me.; Medical School of Maine, Portland, 1883; aged 68; died, August 26, following a long illness.

George Russell Cottingham ✠ Remington, Va.; University College of Medicine, Richmond, 1900; aged 45; died, August 23, of chronic nephritis.

Calvin Ford Ormiston, Cedar Rapids, Iowa; Bennett Medical College, Chicago, 1890; aged 78; died, June 28, of cerebral hemorrhage.

Charles Cleveland Fitch, Visalia, Calif.; Beaumont Hospital Medical College, St. Louis, 1890; aged 68; died, June 18, of cerebral hemorrhage.

Walter F. Snorgrass ✠ Bristow, Okla.; Beaumont Hospital Medical College, St. Louis, 1890; aged 59; died, August 10, of angina pectoris.

Ernest Van Cott ✠ Salt Lake City, Utah; Rush Medical College, Chicago, 1903; aged 49; died suddenly, August 27, of angina pectoris.

Champion Hiram Judson, Dobbs Ferry, N. Y.; Medical Department of Columbia College, New York, 1871; aged 81; died, September 6.

Gideon Osborne Smith, Odessa, N. Y.; University of Buffalo Department of Medicine, 1860; aged 88; died recently, following a long illness.

John Carl Gilstrap, Flowery Branch, Ga.; Georgia College of Eclectic Medicine and Surgery, Atlanta, 1914; aged 36; died, May 27.

John Kirby Smith, Fredericktown, Mo.; Barnes Medical College, St. Louis, 1899; aged 55; died recently, of cerebral hemorrhage.

John W. Page, Burlington, N. C. (nongraduate); aged 66; died, August 22, at a hospital in Greensboro, following a long illness.

Henry Yeoman Mott, Davidson, N. C. (years of practice); Civil War veteran; aged 83; was found dead in bed, August 14.

James Abbott Harper, Shelburn, Ind. (licensed, Indiana, 1897); Civil War veteran; aged 84; died, August 21, of senility.

Simon P. Eckl, Mansfield, Ohio; New York Homeopathic Medical College, 1881; aged 68; died, August 16, of paralysis agitans.

Samuel Foster March, Kansas City, Kan.; Eclectic Medical Institute, Cincinnati, 1884; aged 74; died, August 23, at Paola.

John Tilgham Walker, Holstein, Iowa; Rush Medical College, Chicago, 1873; aged 76; died recently, of arteriosclerosis.

George W. Martin, Athens, Ohio; Eclectic Medical Institute, Cincinnati, 1876; aged 80; died recently, of pneumonia.

James Melvyn, Salmon, Idaho (years of practice); aged 67; died, June 14, of injuries received when gored by a bull.

Charles K. Jones, Kingston, Mo.; Missouri Medical College, St. Louis, 1886; died, August 19, of osteosarcoma.

James H. Teague, West Asheville, N. C. (licensed, North Carolina, 1885); aged 70; died, August 15.

William W. C. Brown, Lafayette, Ind. (licensed, Indiana, 1897); aged 82; died suddenly, August 20.

Grant S. Staub ✠ Dayton, Ohio; Toledo Medical College, 1896; aged 59; died, July 5, of paralysis.

George W. J. Lee, Sheffield, Iowa; Rush Medical College, Chicago, 1869; aged 70; died, August 17.

The Propaganda for Reform

IN THIS DEPARTMENT APPEAR REPORTS OF THE JOURNAL'S BUREAU OF INVESTIGATION, OF THE COUNCIL ON PHARMACY AND CHEMISTRY AND OF THE ASSOCIATION LABORATORY, TOGETHER WITH OTHER GENERAL MATERIAL OF AN INFORMATIVE NATURE

THE SCIENTIFIC AMERICAN ON ABRAMS' "ELECTRONIC REACTIONS"

"At Best It Is an Illusion; at Worst It Is a Colossal Fraud"

In March, 1922, there was published in this department of THE JOURNAL the first of a series of articles on Albert Abrams and his preposterous theories and practices. The immediate result of the first article was to cause Abrams to resign from his local medical society and from the American Medical Association thus relieving both organizations of a situation that had become a stench. Following THE JOURNAL'S first article came a spirited defense of Abrams from Upton Sinclair, a well-meaning visionary who has pronounced dicta at various times on such subjects as socialism, education, the venal press, religion and fasting as a cure-all. Subsequent articles showed that the Abrams cult was made up to no small extent of crude and blatant advertising quacks, near-quacks and faddists with a sprinkling of men who, while they liked to be considered respectable, were essentially unscientific and invariably venal.

During the time that the inherent quackishness of Abrams and his followers was being made plain, it was repeatedly suggested that the American Medical Association conduct a scientific investigation of Abrams' claims. THE JOURNAL pointed out that Abrams had been given an opportunity at different times of subjecting his theories to scientific test and had rejected these opportunities. For the American Medical Association, as an organization of scientific men, to conduct an investigation of Abrams' theories would be to dignify that which was preposterous on its face. Because the Association refused to treat Abramsism as a scientific possibility Abrams himself loudly proclaimed an alleged desire to have his methods and theories tested. Finally a lay publication of unimpeachable character undertook the very thing that Abrams had clamored for. The *Scientific American*, a magazine whose standing is established on both sides of the Atlantic, announced in its issue of October, 1923, that it was undertaking a thorough investigation of the "Electronic Reactions of Abrams" and "Electronic Medicine" in general.

When the announcement was first made THE JOURNAL received many caustic letters from physicians in which it was intimated that the *Scientific American's* investigation was merely going to be an advertising "stunt" for the Abrams cult. About the same time the *Scientific American* itself received equally bitter accusations from the disciples and defenders of Abrams charging that that publication had been subsidized by the "Medical Trust" and that a fund—ranging all the way from $100,000 to $1,000,000, according to the state of imagination—had been turned over by the American Medical Association to the *Scientific American* for the purpose of discrediting Abrams and his theories. The *Scientific American* has published twelve papers in as many issues of the magazine and the twelfth and last one appears in the current issue and contains the verdict.[1]

The investigation which this magazine instituted was carried out by a committee composed of the following men: Austin C. Lescarboura, Managing Editor of *Scientific American*, a member of the American Institute of Electrical Engineers, and a specialist in electrical and radio work, acted as secretary for the committee, did the major part of the investigating work and prepared the articles that appeared; J. Malcolm Bird, one of the Associate Editors of the *Scientific American* and for some years a teacher of mathematics at Columbia University; Robert C. Post, a civil engineer and a member of a well-known firm of structural steel engineers and contractors; Dr. Walter C. Alvarez, well known to readers of THE JOURNAL as Associate Professor of Research Medicine in the University of California and a man who has done considerable research work; Dr. William H. Park, Director of the Bureau of Laboratories of the New York Health Department and Consulting Bacteriologist both for the New York State Department of Health and also for the United States Quarantine Service.

This committee spent more than a year in examining the so-called "Electronic Reactions" and their application in diagnostic and therapeutic work. It studied the technique in detail; attended numerous demonstrations and the members submitted themselves to Abrams' diagnosis in order to learn how the latter appeared from the patient's point of view. The committee procured the genuine Abrams apparatus for first-hand study and experimentation; it made tests with a number of Abrams' disciples for the purpose of determining the accuracy of the so-called reactions and, in short, it kept in touch with the "Electronists" from its high priest Albert Abrams until the time of his death down to the most obscure "ERA" practitioner. Nor was this all. The committee studied alleged cures, maintained a voluminous correspondence with those who claimed to have been benefited by the "Electronic Treatment" and, in fact, carried on the very kind of investigation that Abrams himself asked for—but never expected or desired to get.

And the results of this exhaustive investigation may be summed up in the sentence published at the head of the last article in the current issue of the *Scientific American:* "The Electronic Reactions of Abrams and Electronic Medicine in General Found Utterly Worthless." It is expressed in a little more detail in the opening paragraph of the *Scientific American's* latest and final article:

"The so-called Electronic Reactions of Abrams do not exist—at least objectively. They are merely products of the Abrams practitioner's mind. These so-called reactions are without diagnostic value. And the Abrams oscilloclast, intended to restore the proper electronic conditions in the diseased or ailing body, is barren of real therapeutic value. The entire Abrams electronic technique is not worthy of serious attention in any of its numerous variations. At best, it is all an illusion. At worst, it is a colossal fraud."

The closing article then sketches the long months of work done by the investigating committee and summarizes its findings thus:

"It is the belief of this Committee, based on its observations and experimentation, that the so-called electronic reactions do not exist. They are either faked by the unscrupulous practitioner, or, when the practitioner is sincere, they are baffling products of his subconscious mind. This Committee does not believe that a blood specimen gives off energy, electronic or otherwise, that can be led through wires and detected by means of abdominal reflexes. This Committee does not believe for a moment that any electronic worker can identify similar blood specimens from among miscellaneous blood specimens. All these things cannot be done under cold, clean-cut scientific test conditions. Whatever has been done in everyday practice and under tests conducted by the electronists themselves, has no value in our deliberations.

"This electronic technique has been conceived by a master mind. It is far more intricate and ironclad than medical fads of the past. It deals with a new form of energy which, we are told, cannot be detected by the physicist's most delicate instruments, but can be detected by the abdominal reflexes under the guidance of an electronic diagnostician. These reactions are said to be affected by the presence of skeptical minds, radio broadcasting waves, steel work in buildings, weather, and so on. The conditions are said to be so delicate that diagnostic failures can always be laid to the contamination of the blood specimen through ordinary handling. The reactions come and go for no apparent reason, and at the crucial moment of a test the reactions usually fail entirely because the reagent is exhausted, electronically speaking. But in everyday practice, the electronic reactions apparently work without a hitch.

"The orthodox doctor cannot follow very far in the electronic deliberations. He is out of his element if he does. Should he produce a patient with tuberculosis in the last

1. We are advised that the *Scientific American* will condense the series of articles on the "Electronic Reactions of Abrams" and publish it, with the Committee's verdict, in pamphlet form. The pamphlet, which will sell for 10 cents, can be obtained from the Scientific American Publishing Company, 233 Broadway, New York City.

stages, and the electronic blood examination pronounces the patient to be dying of cancer, the correct answer is cancer and not tuberculosis. The electronic answer, of course, is the correct one, always. Hence the doctor is simply out of his element.

"The electrical engineer and the radio engineer find themselves at sea when investigating the apparatus. True, it utterly fails to make sense on the basis of electrical or radio reasoning, but then this is not electricity or radio waves—it is electronic. Thus the electronic field is again barred to others.

"Thousands of doctors and near-doctors have entered the electronic fold. They have gone about their work of diagnosing and treating that part of the public which seeks something new in medicine as well as in clothes and automobiles. So-called radio men have found lucrative employment in working for electronists as 'engineers.' Many a small manufacturer has found a profitable field in turning out all manner of pseudo-radio devices called electronic diagnosis and treatment apparatus. And all of this activity comes right down to the so-called electronic reactions of Abrams, which, according to this Committee, do not exist.

"Meanwhile, this electronic development has caused a sad state of affairs in this world of ours. It has given rise to all sorts of occultism in medicine. It has been a renaissance of the black magic of medieval times. It has given free reign to idiotic ideas—ideas which would formerly have been laughed out of existence at their very start. Suffering humanity has been made so many lavish promises of late that it is a sad disillusion now to go back to our conservative orthodox medicine, which, after all, remains our mainstay."

"So much for Buckingham." The *Scientific American* has done a good job and a public service. To some it may seem to have been a tremendous waste of valuable time and high class energy. In a gullible world, however, it often becomes necessary to prove by the methods of a Euclidean Q. E. D. the supposedly patent fact that the moon is not and never was made of green cheese.

Correspondence

"RATE OF PROGRESS OF FOOD RESIDUES THROUGH THE BOWEL"

To the Editor:—The extremely valuable article by Drs. Alvarez and Freedlander entitled "The Rate of Progress of Food Residues Through the Bowel" (The Journal, August 23) contains an erroneous statement of fact, and it is on this statement that their experimental work was based.

They state that "every physician and layman is satisfied that the rate of progress of food through the bowel takes normally from twenty-four to forty-eight hours. Every roentgenologist knows that most of the barium leaves the body within twenty-four hours, and that only traces can be seen after forty-eight hours." To disprove this statement they undertook a long and laborious work.

Various methods and routines of technic are employed by roentgenologists in the examination of the gastro-intestinal tract. The most widespread practice is to give a strong purgative the evening before commencement of the examination, and some even go so far as to require purgatives on the two previous days.

As a result of this "preparation" for the barium-meal examination, the entire gastro-intestinal tract is markedly irritated and the colonic contents are discharged much more quickly than normal. The object is to empty the intestines thoroughly before the barium-meal examination is made. The effect of the purgative lasts longer than is commonly supposed. It always is strongly active on the bowel during the first day of roentgen-ray examination, and at six hours after ingestion of the meal it is not at all uncommon to find the barium already in the sigmoid colon or even in the rectum.

One would suppose that the effect of the purgative would wear off after twenty-four hours, but such is not the case. Even on the second day of roentgen-ray examination (the forty-eight hour examination) the effects are still noticeable in the large bowel, and practically always the colon is empty at this time or nearly so, as Drs. Alvarez and Freedlander state. It is quite evident, therefore, that the "physiology" which their experimental work undertook to refute was based on erroneous information from roentgenologists. The normal bowel did not empty itself in the twenty-four or forty-eight hours; it was the irritated bowel following a drastic purgative.

The routine that I and a minority of other roentgenologists follow is to give absolutely no purgative for at least forty-eight hours previous to gastro-intestinal study. We then find an entirely different state of affairs. The stomach normally empties in six hours, and at this time the head of the meal is in the cecum or the ascending colon, while the tail of the meal is in the terminal portion of the ileum.

Then we find that, twenty-four hours after ingestion of the meal, the barium extends from the rectum to the cecum, with the small bowel clear. There may or may not have been a bowel movement in the meantime.

Then at forty-eight hours after ingestion of the meal we expect to find the meal extending from the rectum to either the cecum or the ascending colon, sometimes the hepatic flexure. Finally, at the seventy-two hour examination we find the large bowel either entirely empty, or a few specks of barium strung out in the last half of the colon. It is quite evident, therefore, that the above-named investigators started out to disprove something that did not exist. We usually expect the large bowel to empty or practically empty in from forty-eight to seventy-two hours. The dye and charcoal tests give practically the same results.

Now, in regard to the stasis which was found in some individuals of from one to several weeks, it is admitted by them that the second and third beads moved faster than the first. This is anomalous, and requires explanation before it can be accepted as a normal occurrence.

Not infrequently in roentgen-ray examinations, a small amount of barium is seen to be held up in the cecum for varying lengths of time. This small mass of barium slowly gives off small portions of itself so that there is fine, flaky barium strung out in the large bowel, with a heavier mass in the tip of the cecum. I have observed this cecal stasis to last from a week to ten days, and even then be removed entirely only by a purgative. Ordinarily, however, the physician expects his patient back in two or three days and the cecal stasis is not followed to the end.

This cecal stasis is not at all unfamiliar to roentgenologists. Some have tried to explain it by the presence of pericecal adhesions following appendectomy. But it is seen both in those who have had their appendixes removed and in those who still have their appendixes; it is seen with the normal appendix as well as with chronic appendicitis.

To summarize, therefore, roentgenologists find that the rate of discharge for a normal meal from a normal gastro-intestinal tract is from forty-eight to seventy-two hours; that is, from two to three days after ingestion of the meal. Anything less than forty-eight hours is hypermotility, and anything more than seventy-two hours is constipation.

Morris I. Bierman, M.D., Washington, D. C.

[The letter of Dr. Bierman was referred to Dr. Alvarez, who replies:]

To the Editor:—Dr. Bierman first accuses Dr. Freedlander and me of tilting at windmills and then admits that the windmills are giants to the majority of roentgenologists. Since the "minority" led by himself have obtained results that are somewhat similar to ours, he feels that we have wasted our time. Actually, we did not start out to refute anything—we were simply trying, with the help of a new technic, to get

more exact, quantitative data in regard to the passage of food residues through the bowel. The truth of the matter is that the results of the first series of experiments in 1913 were so different from what I had been taught to expect that I did not have the courage to publish anything until three men and women working independently of one another in my laboratory had obtained the same figures.

Now as to the statement that Dr. Freedlander and I are misinformed about the literature. Our use of the term "every" may have been rather sweeping; but after spending weeks in the library, my co-worker came to the conclusion that Burnett was the only one whose results resembled ours. A bibliography was included in the first draft of our paper, but as it did not seem to contribute much of value it disappeared during the boiling down process. Perhaps I may be permitted to quote from the first two authorities on our list; to give more would mean only repetition. Hurst (Constipation, etc., London, 1909, p. 12) says: "If the bowels are opened once a day the interval between a meal and the excretion of its residue varies approximately between nine and thirty-two hours." Carman and Miller in their monograph (first edition, p. 442) say: "Twenty-four to forty-eight hours is regarded by many roentgenologists as a fair time basis for the passage of bariumized food through the digestive tract."

There is something in what Dr. Bierman says about the unwisdom of preliminary purgation when we wish to study a normal bowel. The first two books that I pick up from my desk: Carman and Miller, and Holmes and Ruggles, warn against it, and I thought it best to give it up in 1912 when I first began the use of the roentgenoscope in daily practice. Such preliminary purgation, however, cannot account for the discrepancy between our experimental results and those of the roentgenologists, because in my office, where the patients are rarely purged, I see any number of men and women whose colons are practically empty in twenty-four hours and empty in forty-eight. Furthermore, the older roentgenologists will remember that when barium was being substituted for bismuth, many workers commented on the fact that the new drug went through the tract faster than did the old. It seemed to have a definite stimulating effect; and we now know from the experiments in which barium and beads were given together that the drug often does accelerate the passage of material through the bowel.

WALTER C. ALVAREZ, M.D., San Francisco.

"MEDICAL EDUCATION"

To the Editor:—The editorial on medical education together with Pusey's published letter is so timely and to the point that, in my opinion, they deserve more than passing notice. While I personally believe that medicine is in a condition of "flux" that may ultimately mean what Rev. E. A. Hersh said at the Rush commencement about sixteen years ago, when he stated that some day the doctor would again become the priest of the people and the present priests would step out, this evolution is no doubt a long way off. Meanwhile, "it is a condition and not a theory that confronts us." I believe that much could be done to change this condition for the better ideals for which the profession stands.

These things include: more general practitioners; making dentistry a specialty of medicine; combining all the clinical material into a compact organization controlled and financed by the profession itself; taking postgraduate instruction out of the hands of private schools and putting it in the hands of the profession and financed by the profession as well as the public; making postgraduate instruction so that the weakest link in the chain could afford to keep constantly in touch with the newer methods, ideals and progress in medicine. Finally, part of the dues for medical society organization should be devoted to financing such projects and building up centers for medical education and organization.

We need more elucidation from the leaders.

DANIEL S. HAGER, M.D., Los Angeles.

SHALL THE PUBLIC TAKE FULL RESPONSIBILITY FOR SMALLPOX?

To the Editor:—While attending a meeting of the Northwestern Medical Association, held at Lovell, Wyo., September 4, I was impressed so fully by a remark made by Dr. Evard Olson, secretary of the society, relative to the handling of the vaccination question, that I feel called on to ask for a modest amount of space in THE JOURNAL, that Dr. Olson's idea may receive the publicity it deserves.

Dr. Olson stated that the nonquarantining of all smallpox cases would soon result in the universal adoption of vaccination. Vaccination either is, or is not, a fallacy. If vaccination is efficient, quarantine is unnecessary. Dr. Olson argued that if all smallpox cases were unquarantined, and that if all citizens were given to understand that such conditions existed, and also that the positive protection against the disease, i. e., vaccination, was offered, and that "whosoever will, may come," that the matter of "compulsion" as to vaccination would no longer furnish an "arguing point" in the minds of the antivaccinationists.

As smallpox would be an impossible thing in a community where all were vaccinated, and, further, because it falls on the unvaccinated to perpetuate the disease, community welfare would soon cause persons to ask for the protection afforded by vaccination; Mr. Citizen, himself, would fight the battle for a clean community, and the physician would be relieved of much unpleasantness.

W. V. GAGE, M.D., Worland, Wyo.

"THE PRESCRIBING OF GLASSES": A DISCLAIMER

To the Editor:—Mr. G. H. Aronsfeld of Galveston, Texas, has taken exception to a portion of my address before the Section on Ophthalmology of the American Medical Association (THE JOURNAL, July 26), in which I referred to an article in *Wellsworth*, October, 1923, depicting as good salesmanship a sale by Mr. Aronsfeld of expensive gold framed glasses to a patient who "looked to be an ordinary working man." I referred to this article as an example of the growing and unfortunate desire of a certain class of opticians to make sales of expensive glasses without regard to the needs and pocketbooks of their patients. Mr. Aronsfeld tells me that the article was not written by him and was incorrect, and that the patient to whom he sold the glasses in question asked for the best glasses possible and was able to afford them. I, of course, had no knowledge of this and relied on the truth of the article. In the light of Mr. Aronsfeld's statement I feel that I owe him an apology.

GEORGE S. DERBY, M.D., Boston.

AMYOTONIA CONGENITA

To the Editor:—In THE JOURNAL, September 13, p. 842, Dr. Gerald R. Allaben reports two cases of amyotonia congenita occurring in the same family, and states that the familial tendency has not been noted in the cases heretofore reported. This statement is erroneous. Not only have I reported two cases in brother and sister (*Arch. Pediat.* **38**:303 [March] 1921), but several instances of familial occurrence are quoted in Faber's review of the subject (*Am. J. Dis. Child.* **13**:305 [April] 1917).

JOSEPH POPPER, M.D., New York.

Queries and Minor Notes

ANONYMOUS COMMUNICATIONS and queries on postal cards will not be noticed. Every letter must contain the writer's name and address, but these will be omitted, on request.

MERCUROCHROME-220 SOLUBLE AND GENTIAN VIOLET INTRAVENOUSLY

To the Editor:—1. Please give references to the treatment of septicemia and local infections by intravenous mercurochrome and gentian violet. 2. Give method of preparation for injection with reference as to whose products to use and to technic of administration. I have used two syringes, one syringe for salt solution to enter the vein and then a syringe charged with gentian violet. 3. What is the effect of gentian violet spilled subcutaneously? Is it similar to arsphenamin or salt solution? 4. Will gentian violet, if injected intradermally, be removed or remain as tattoo marks?

M.D., Wash.

ANSWER.—1. The following is a list of references to articles on intravenous injection of mercurochrome-220 soluble and gentian violet in the treatment of septicemia and local infections:

Young, H. H.; White, E. C., and Swartz, E. O.: A New Germicide for Use in Genito-Urinary Tract: "Mercurochrome-220," THE JOURNAL, Nov. 15, 1919, p. 1483.

Martin, W. L.: Use of Mercurochrome-220 in Infected Wounds, *U. S. Nav. M. Bull.* **16**: 718-719 (April) 1922.

Young, H. H.; White, E. C., and Swartz, E. O.: Further Clinical Studies on Use of Mercurochrome as a General Germicide, THE JOURNAL, July 9, 1921, p. 93.

Young, H. H., and Hill, J. H.: Treatment of Septicemia and Local Infections by Intravenous Injections of Mercurochrome-220 Soluble and Gentian Violet, THE JOURNAL, March 1, 1924, p. 669.

Smith, D. T., and Casparis, Horton: Gentian Violet in Staphylococcus Septicemia, THE JOURNAL, Dec. 29, 1923, p. 2184.

Churchman, J. W.: Effect of Slight Increase of Temperature on Bacteriostatic Power of Gentian Violet, *Bull. Johns Hopkins Hosp.* **33**: 227-229 (June) 1922.

Churchman, J. W.: Further Studies on Behavior of Bacteria Toward Gentian Violet, *J. Exper. Med.* **33**: 569 (May) 1921.

Churchman, J. W.: Sterilization of Closed Cavities by Lavage and Staining with Gentian Violet, THE JOURNAL, July 2, 1921, p. 24.

Churchman, J. W.: Selective Bacteriostasis in Treatment of Infections with Gentian Violet, THE JOURNAL, Jan. 17, 1920, p. 145.

Young, H. H., and Birkhaug, Konrade: Cure of Scarlet Fever Complicated with Erysipelas and Streptococcus Septicemia by Intravenous Injection of Mercurochrome-220 Soluble, THE JOURNAL, Aug. 16, 1924, p. 492.

Churchman, J. W.: Selective Bacteriostatic Action of Gentian Violet and Other Dyes, *J. Urol.* **11**: 1 (Jan.) 1924.

2. Mercurochrome-220 soluble and gentian violet, when administered intravenously, are used in recently prepared aqueous solution. Of mercurochrome, 5 mg. per kilogram of body weight appears to be generally used; this dosage is administered in a 1 per cent. solution, freshly prepared from recently distilled water and filtered before using. Of gentian violet, Hill and Young used 0.25 per cent. aqueous solution, the dose being 5 mg. per kilogram of body weight. Mercurochrome-220 soluble, marketed by Hynson, Westcott & Dunning, Baltimore, has been accepted for New and Nonofficial Remedies. Gentian violet medicinal-"National" of the National Aniline & Chemical Company, New York, and gentian violet improved medicinal, marketed by Coleman & Bell Company, Norwood, Ohio, have been accepted for New and Nonofficial Remedies (THE JOURNAL, Sept. 6, 1924, p. 767).

3. Gentian violet solution when "spilled subcutaneously" will not produce the extensive induration, etc., produced by arsphenamin.

4. It will not remain permanently in the tissues.

HECTINE

To the Editor:—I have read an article on blood filariasis and its treatment by subcutaneous injections of hectine by Tanon and Giraud, and being unable to locate any source of supply of this preparation, I will be greatly obliged to you if you will furnish me with any information concerning it that you may have. I have a case of filariasis with an elephantiasis of the right leg, and, having tried many things without any benefit, I am extremely anxious to find some remedy for the condition.

CHARLES Z. CANDLER, M.D., SYLVA, N. C.

ANSWER.—"Hectine" is said to be sodium benzosulphoaminophenyl-arsenate, and therefore is similar in composition to the product "atoxyl." Atoxyl is one of a class of arsenical preparations, the use of which has been generally discontinued in favor of the products of the arsphenamin type (THE JOURNAL, Feb. 26, 1921, p. 595).

Hectine has not been accepted for New and Nonofficial Remedies, nor has the American agent, George J. Wallau, Inc., requested such recognition by the Council.

Medical Education, Registration and Hospital Service

COMING EXAMINATIONS

ARIZONA: Phoenix, Oct. 7-8. Sec., Dr. W. O. Sweek, 404 Heard Bldg., Phoenix.

CALIFORNIA: Sacramento, Oct. 20-23. Sec., Dr. Charles B. Pinkham, 908 Forum Bldg., Sacramento.

DISTRICT OF COLUMBIA: Washington, Oct. 14. Sec., Dr. Edgar P. Copeland, Stoneleigh Court, Washington.

FLORIDA: Tallahassee, Oct. 14-15. Sec., Dr. Wm. Rowlett, Citizens Bank Bldg., Tampa.

GEORGIA: Atlanta, Oct. 14-16. Sec., Dr. C. T. Nolan, Marietta.

HAWAII: Honolulu, Oct. 13-16. Sec., Dr. G. C. Milnor, 401 So. Beretania St., Honolulu.

IDAHO: Boise, Oct. 7. Dir., Mr. Chas. Laurenson, Boise.

ILLINOIS: Chicago, Oct. 7-9. Supt. of Regis., Mr. V. C. Michels, Springfield.

IOWA: Des Moines, Oct. 1-3. Sec., Dr. Rodney P. Fagen, Capitol Bldg., Des Moines.

KANSAS: Topeka, Oct. 14. Sec., Dr. Albert S. Ross, Sabetha.

MICHIGAN: Lansing, Oct. 14-16. Sec., Dr. B. D. Harison, 707-8 Stroh Bldg., Detroit.

MINNESOTA: Minneapolis, Oct. 7-9. Sec., Dr. Thos. McDavitt, 539 Lowry Bldg., St. Paul.

MONTANA: Helena, Oct. 7. Sec., Dr. S. A. Cooney, Power Bldg., Helena.

NEW JERSEY: Trenton, Oct. 21-22. Sec., Dr. Alex Macalister, State House, Trenton.

NEW MEXICO: Santa Fe, Oct. 13-14. Sec., Dr. W. T. Joyner, Roswell.

OKLAHOMA: Oklahoma City, Oct. 14-15. Sec., Dr. J. M. Byrum, Shawnee.

RHODE ISLAND: Providence, Oct. 2-3. Sec., Dr. B. U. Richards, State House, Providence.

UTAH: Salt Lake City, Oct. 7. Sec., Mr. J. T. Hammand, 412 State Capitol Bldg., Salt Lake City.

WEST VIRGINIA: Charleston, Oct. 28. Sec., Dr. W. T. Henshaw, Charleston.

WYOMING: Cheyenne, Oct. 6-8. Sec., Dr. J. D. Shingle, 226 Citizens Bank Bldg., Cheyenne.

Kansas June Examination

Dr. A. S. Ross, secretary, Kansas Board of Medical Registration and Examination, reports the written examination held at Topeka, June 17-18, 1924. The examination covered 10 subjects and included 100 questions. An average of 75 per cent. was required to pass. Twenty-eight candidates were examined, all of whom passed. Eleven candidates were licensed by reciprocity. The following colleges were represented:

College	PASSED	Year Grad.	Per Cent.
Loyola University		(1924)	91.3
University of Kansas		(1924, 22)	85.6, 86.8, 87.4, 87.5 88.6, 88.7, 88.7, 89.3, 89.6, 90.3, 90.4, 90.4, 90.5, 90.6, 90.8, 90.9, 91.4, 91.8, 91.9, 92.2, 93.2, 94.3
University Medical College of Kansas City		(1900)	89.8
Syracuse University		(1918)	91.3
Meharry Medical College		(1921)	80.7, (1923) 78.8
McGill University Faculty of Medicine		(1923)	88.2

College	LICENSED BY RECIPROCITY	Year Grad.	Reciprocity with
George Washington University		(1912)	Dist. Colum.
Bennett Medical College		(1912)	Nebraska
Chicago College of Medicine and Surgery		(1914)	Illinois
Loyola University		(1916)	Illinois
State University of Iowa College of Medicine		(1904)	Iowa
University of Minnesota		(1924)	Minnesota
Creighton Medical College		(1923, 3)	Nebraska
University of Nebraska		(1921)	Nebraska
Meharry Medical College		(1913)	Tennessee

Iowa May Examination

Dr. Rodney P. Fagen, secretary, Iowa Board of Medical Examiners, reports the written examination held at Iowa City, May 29-31, 1924. The examination covered 8 subjects and included 100 questions. An average of 75 per cent. was required to pass. Fifty-four candidates were examined, all of whom passed. Twenty-four candidates were licensed by reciprocity. The following colleges were represented:

College	PASSED	Year Grad.	Per Cent.
Northwestern University Medical School		(1924)	89.8, 90.5
State University of Iowa College of Medicine		(1924, 47)	87.6, 87.8, 88, 88.3, 88.3, 88.6, 88.6, 88.6, 88.9, 88.9, 89.1, 89.1, 89.4, 89.5, 89.6, 89.6, 89.6, 89.6, 89.6, 89.6, 89.8, 89.8, 89.9, 89.9, 89.9, 89.9, 90, 90, 90, 90.1, 90.1, 90.3, 90.3, 90.3, 90.3, 90.4, 90.4, 90.4, 90.5, 90.5, 90.6, 90.6, 91, 91.4, 91.4, 91.4, 91.9
Tufts College Medical School		(1921)	88.4
St. Louis University School of Medicine		(1924)	89
University of Jena, Germany		(1921)*	88.3
University of Wurzburg, Germany		(1922)*	88.6
University of Cluj, Roumania		(1920)*	87.3

LICENSED BY RECIPROCITY

College	Year Grad.	Reciprocity with
University of Arkansas	(1916)	Arkansas
College of Medical Evangelists	(1916), (1919)	California
Dearborn Medical College	(1907)	Illinois
Loyola University	(1916)	Illinois
Northwestern University	(1924)	Illinois
Rush Medical College	(1903)	Illinois
University of Illinois College of Medicine	(1923, 2)	Illinois
Harvard University	(1921)	Illinois
University of Minnesota	(1924)	Minnesota
Creighton Medical College	(1920), (1922), (1923, 6)	Nebraska
University of Nebraska	(1923)	Nebraska
Jefferson Medical College	(1911)	Penna.
University of Pennsylvania	(1907)	Illinois
Meharry Medical College	(1918)	Tennessee
University of Naples, Italy	(1898)	Mississippi

* Graduation not verified.

Book Notices

DIFFERENTIAL DIAGNOSIS. Presented Through an Analysis of 317 Cases. By Richard C. Cabot, M.D., Professor of Medicine and Professor of Social Ethics at Harvard University. Volume II. Third edition. Cloth. Price, $9 net. Pp. 709, with 254 illustrations. Philadelphia: W. B. Saunders Company, 1924.

The method of presentation is a practical one. The book considers separately nineteen symptoms, such as abdominal and other tumors, vertigo and diarrhea. Each is given a general survey, followed by numerous illustrative case reports. The survey classes the main causes of a symptom, the relative frequency with which each is met, and the leading corroborative signs and symptoms. The cases presented are carefully selected. Each case history is given, followed by the results of physical examination and laboratory tests. The discussion presents the possible diagnosis, and the factor or factors that eliminate some of them. The final conclusion is based on operation, necropsy or the future course of the patient. The case method gives a sound and valuable, although bulky, presentation of differential diagnosis. Its value would be greatly enhanced by a full and logical index, which is unfortunately lacking in this book.

ORGANIC ARSENICAL COMPOUNDS. By George W. Raiziss, Ph.D., Professor of Chemotherapy, Graduate School of Medicine University of Pennsylvania, and Joseph L. Gavron, B.S., Associate in Research Chemistry, Dermatological Research Laboratories. Cloth. Price, $7 net. Pp. 570. New York: The Chemical Catalog Company, 1923.

This is another contribution to the excellent series of monographs written under the direction of the American Chemical Society. The authors have had wide experience in the preparation of arsenicals, and much influence in establishing confidence in American-made arsphenamin, particularly in the trying days of the German embargo on "Salvarsan." The number of known organic arsenic compounds extends into the thousands, yet not more than one occurs in Nature; the remainder are the results of the ingenuity of the chemist. Probably there is no other element that has been the subject of more extensive chemical, biologic and chemotherapeutic investigations. In fact, this one branch of chemistry has developed at such a rate in the last ten years that there has been great need for an authoritative treatise on the arsenicals. And such a book has been ably written by Raiziss and Gavron. The compounds are described clearly, yet concisely. Structural formulas abound, which means, of course, that the proof-reading has been most careful. The authors have discussed in a well balanced manner the therapeutic relationship of arsenicals and concomitant impurities. The chapter on the chemotherapy of organic arsenicals will appeal to investigators in syphilology and dermatology. To illustrate its value as a reference book, it may be pointed out that there are 1,594 references to the literature.

THE EVOLUTION OF MAN. Essays. By G. Elliot Smith, M.A., M.D., Litt.D. Cloth. Price, $2.85. Pp. 159, with 19 illustrations. New York: Oxford University Press, 1924.

In this volume are included three lectures delivered by the noted British physician and anthropologist before leading British scientific organizations. Dr. Smith had much to do with the study of the famous Rhodesian skull discovered in 1921, the remarkable tooth found in Nebraska in 1922, and many other recent anthropologic discoveries. He constructs a family tree which places the Nordic race at the apex of man's evolution. Of this evolution from the apes, he says, "To deny the validity of this evidence of near kinship is tantamount to a confession of the utter uselessness of the facts of comparative anatomy as indications of genetic relationships, and a reversion to the obscurantism of the dark ages of biology." Among the apes, the gorilla and chimpanzee are placed as the common ancestors of man. The argument of Dr. Smith aims to demonstrate that it is the steady growth and specialization of the brain that has been the fundamental factor in leading man's ancestors upward from the lowly insectivore status. Having completed his discussion of evolution, the author considers primitive man and the differences between the Neanderthal, the Piltdown, the Rhodesian and the other primitive types thus far identified. He traces beautifully the gradual transition from the animal to man, the development of the brain, the ability to use the knowledge of the community and of the environment, the domestication of animals and, finally, cultivation of the soil. This leads at last to the conclusion that "throughout the course of human history, man's attitude has been determined not by the alteration of the structure of the mind, but by the intellectual and moral influences which have been impressed on each individual's mind by the community in which he lived. . . . The fact that his skull was long or broad, or his hair blond or dark, or the matter of his ancestry, whether he belonged to the Alpine, the Nordic or the Mediterranean races, would count for little in this process in comparison with the potent molding force of the atmosphere of the family and the society in which he grew up during the years of his mental plasticity." The final lecture deals with the human brain, of the varying conceptions held by man, and of the development of the function of this organ since the earliest times.

HANDBUCH DER EXPERIMENTELLEN PHARMAKOLOGIE. Herausgegeben von A. Heffter, Professor der Pharmakologie an der Universität Berlin. Erster Band. Kohlenoxyd, Kohlensäure, Stickstoffoxydul, Narkotica der Aliphatischen Reihe, Ammoniak und Ammoniumsalze, Ammoniakderivate: Aliphatische Amine und Amide: Aminosäuren, Quartäre Ammoniumverbindungen und Körper mit Verwandter Wirkung, Muscaringruppe, Guanidingruppe, Cyanwasserstoff: Nitriglucoside, Nitrile: Rhodanwasserstoff: Isocyanide, Nitritgruppe, Toxische Säuren der Aliphatischen Reihe, Aromatische Kohlenwasserstoffe, Aromatische Monamine, Diamine der Benzolreihe, Pyrazolonabkömmlinge, Camphergruppe, Organische Farbstoffe. Paper. Price, $11.20. Pp. 1296, with 129 illustrations. Berlin: Julius Springer, 1923.

According to the title-page, the "Handbuch" contains contributions from leading pharmacologists of the world. The first volume—which is the only one available—contains chapters written by fourteen men, including Reid Hunt of this country. The work is to be issued in three volumes, each containing more than a thousand pages. The first volume deals with such subjects as carbon monoxid, carbon dioxid, inhalation anesthesia, alcohol, narcotics and hypnotics, the guanidin group, nitrate group, and various diamins. It is, indeed, a book for the laboratory pharmacologist or research therapeutist—references abound and the material is of relatively recent date. The constitution, chemical and physical properties, the toxicologic influence on various organs, and the clinical application is the general order in which the substances are discussed. While it is not intended as a critical work suitable as a textbook, it promises to be a most valuable reference book in this ever increasing field of knowledge.

WHAT DOES YOUR CHILD WEIGH? By Edith B. Lowry, M.D. Cloth. Price, $1.25. Pp. 187. Chicago: Forbes & Company, 1924.

Here is another presentation of the familiar Wood tables of height and weight, the classifications of bad health habits and bad diet, and a rather uninspired routine discussion of methods for improvement. The volume concludes with an announcement of a camp in which the author gives personal attention to children. While the advice contained in the book is sound, it is not especially well presented, or in such form as to appeal particularly to the public, especially at a time when many altruistic agencies are issuing similar material in more attractive form.

Medicolegal

Fees Payable by Third Party

(Girdner v. Myers (Mo.), 259 S. W. R. 150)

The Kansas City (Mo.) Court of Appeals, in affirming a judgment against the defendant covering items amounting to $623.40 for surgical, medical and hospital services rendered by the plaintiff to one Ritter, says that Ritter was the defendant's superintendent at a factory of which the defendant was manager and one of the owners. Ritter, while riding in an automobile, was injured at a railroad crossing. The plaintiff received an urgency call, went to the crossing, and immediately took Ritter to his (the plaintiff's) hospital. Later in the same day the defendant went to the plaintiff's home, inquired about Ritter's condition, and told the plaintiff to take care of the case and to charge it to him (the defendant). After Ritter was discharged from the hospital, and the plaintiff asked the defendant for the payment of the bill, the defendant requested the plaintiff to make out his bill to Ritter and leave it with the latter, and the defendant would make an arrangement with Ritter whereby he would place the money in the bank to Ritter's credit, and then Ritter could write his own check, as, the defendant said: "It will keep our books straighter." Plaintiff's reply was that it would make no difference to him, just so he got his money. Accordingly, the plaintiff made out the bill in Ritter's name and took it to him. About a week later, the defendant told the plaintiff that he had mentioned the matter to Ritter, but that Ritter had given him to understand that he would take care of his own business. The plaintiff then said to the defendant, "I am looking to you for this," to which the defendant replied, "I will do the best I can." The plaintiff testified that he never looked to Ritter for the payment of the bill but to the defendant, who had authorized it, and that the only reason he ever made out a bill in Ritter's name and took it to him was that the defendant had requested him to do so.

The evidentiary facts in support of the plaintiff's case did not make of it one wherein one man orally tells another to render services to a third (to whom the first owes no obligation), and, if the one receiving the benefit of the services does not pay the bill, he will. It was a case in which the jury could reasonably find that the defendant expressly directed the plaintiff physician to do everything necessary to be done for the injured man, and to charge the bill to the defendant. In other words, the defendant directed the services to be rendered and agreed to pay for them, and the plaintiff had good reason to understand it in that light. Furthermore, the evidence tended to show that the defendant was pecuniarily interested in having the man well cared for, and hence the latter was not a stranger sustaining no relation whatever to the defendant. This is not stated as constituting, of itself, a ground of liability, but as affording reasonability to the contention that the defendant agreed to pay for the services, and that the plaintiff understood it that way, and intended at the time to look to the defendant for such pay.

The promise or contract to pay relied on occurred before the services were rendered, unless it could be said that the taking of the patient to the hospital and the first act of emergency treatment given him occurred before the contract. However, as this would be so infinitesimal when compared to the rest of the services, and as there was room for believing that the defendant was pecuniarily interested in having him cared for and wanted that done, there was no reason for any distinction on that ground.

Because the plaintiff's account book was not formally introduced in evidence, it could not be said that there was no evidence on which to base a verdict. There was evidence that the items in the account were rendered, that they were charged to the defendant, and were reasonable. No objection was made to the nonintroduction of the account book in evidence, nor was there any objection made to the evidence in support of the account on that ground. Again, since there was evidence that the charges for the items in the account were reasonable, there was no basis for the contention that there was no evidence of the reasonable value of the roentgenograms or of the surgical dressings, and that consequently the verdict was excessive.

If there was a contract on the defendant's part to pay for the services, it was not necessary for the plaintiff otherwise to "protect himself for the payment" thereof, or "to notify the defendant that he would charge him" therefor, as it was sought to have the jury instructed that he should have done.

A rehearing was denied the defendant.

Unlawful Transportation of Narcotics by Physicians

(Stout v. State (Okla.), 224 Pac. R. 375)

The Criminal Court of Appeals of Oklahoma, in affirming a judgment of conviction of defendant Stout of illegally transporting narcotic drugs, says that his punishment was fixed at confinement in the penitentiary for a term of three years and a fine of $1,000. The prosecution was predicated on Section 8887 of the Compiled Statutes of Oklahoma of 1921. In this appeal, the judgment of the trial court was attacked from several angles, all of which, however, related to the defendant's contention that under the provisions of this narcotic drug law a physician is authorized to transport narcotics, and that for this reason the information and the proof supporting it were insufficient. But this statute was designed to prohibit the unauthorized sale, introduction and transportation of narcotic drugs; it applies to physicians as well as others, excepting only in cases in which the use of narcotic drugs is necessary in the treatment of disease, and then only in such quantities and in such manner as designated in the statute. The fact that the accused is a physician will not make him immune from punishment under the penal provisions of the statute in cases in which he knowingly participated in the unauthorized traffic in narcotics. This statute is within the police power of the state, designed as it is to discourage and suppress both the open and the insidious use of narcotics—a growing evil which tends to undermine the health and morals of individuals and which has become a serious menace to the welfare of the state. To curb the cupidity of depraved persons, including physicians, who traffic in the lives and morals of others, the state has prescribed severe penalties, and the grave consequences of this evil justify the drastic penalties found in the statute. The judgment in this case may seem severe, but one of the purposes in punishing lawbreakers is to deter others from committing the same offense. With that purpose in mind, this court will refuse to exercise its right to mitigate the punishment assessed in this case.

Society Proceedings

COMING MEETINGS

American Association of Railway Surgeons, Chicago, Oct. 15-17. Dr. Louis J. Mitchell, 29 East Madison Street, Chicago, Secretary.
American Child Health Association, Kansas City, Mo., Oct. 15-17. Dr. Philip Van Ingen, 125 East 71st Street, New York, Secretary.
American College of Radiology and Physiotherapy, Chicago, Nov. 12-14. Dr. Roy W. Fouts, 121 South 33d Street, Omaha, Secretary.
American College of Surgeons, New York, Oct. 20-24. Dr. Franklin H. Martin, 40 East Erie Street, Chicago, Director-General.
American Public Health Association, Detroit, Oct. 20-23. Mr. Homer N. Calver, 370 Seventh Avenue, New York, Secretary.
Association of Military Surgeons of the United States, San Antonio, Tex., Nov. 13-15. Major E. E. Hume, M. C., U. S. A., Army Medical Library, Washington, D. C.
Central States Pediatric Society, Rochester-Minneapolis, Oct. 30-31. Dr. H. T. Price, Westinghouse Building, Pittsburgh, Secretary.
Colorado State Medical Society, Denver, Oct. 7-9. Dr. F. B. Stephenson, Metropolitan Building, Denver, Secretary.
Delaware State Medical Society, Milford, Oct. 14-15. Dr. W. O. LaMotte, Industrial Trust Building, Wilmington, Secretary.
Indiana State Medical Association, Indianapolis, Sept. 24-26. Dr. Charles N. Combs, 221 South 6th Street, Terre Haute, Secretary.
Interstate Post-Graduate Assembly of America, Milwaukee, Oct. 27-31. Dr. W. B. Peck, 82 Stephenson St., Freeport, Ill., Managing Director.
Kentucky State Medical Association, Louisville, Sept. 23-25. Dr. A. T. McCormack, 532 West Main Street, Louisville, Secretary.
Medical Association of the Southwest, Kansas City, Mo., Oct. 13-18. Dr. E. H. Skinner, Rialto Building, Kansas City, Mo., Secretary.
Minnesota State Medical Association, St. Cloud, Oct. 8-10. Dr. Carl B. Drake, Guardian Life Building, St. Paul, Secretary.
Pennsylvania, Medical Society of the State of, Reading, Oct. 6-9. Dr. W. F. Donaldson, Jenkins Arcade, Pittsburgh, Secretary.
Vermont State Medical Society, Burlington, Oct. 9-10. Dr. W. G. Ricker, St. Johnsbury, Secretary.
Virginia, Medical Society of, Staunton, Oct. 14-17. Miss Agnes V. Edwards, 104½ West Grace Street, Richmond, Secretary.

Current Medical Literature

AMERICAN

The Association library lends periodicals to Fellows of the Association and to individual subscribers to THE JOURNAL for a period of three days. No foreign journals are available prior to 1920, nor domestic prior to 1923. Requests should be accompanied by stamps to cover postage (6 cents if one and 12 cents if two periodicals are requested).

Titles marked with an (*) are abstracted below.

American Journal of Diseases of Children, Chicago

28: 133-264 (Aug.) 1924

*Congenital Syphilis. L. Findlay, Glasgow, Scotland.—p. 133.
*Lange Gold Chlorid Reaction on Cerebrospinal Fluid in Infants and Young Children. C. G. Grulee, Chicago.—p. 147.
Studies in Growth. III. In Untreated Mongolian Idiots. F. B. Talbot, Boston.—p. 152.
*Prognosis of Sequelae of Epidemic Encephalitis in Children. R. L. J. Kennedy, Rochester, Minn.—p. 158.
Effect of Pregnancy on Scurvy in Guinea-Pigs. H. J. Gerstenberger, W. M. Champion and D. N. Smith, Cleveland.—p. 173.
Foreign Bodies in Air and Food Passages of Infants and Children. R. S. Rowland, Detroit.—p. 183.
*Transposition of Abdominal Viscera. E. Shaw and H. K. Blake, Boston. —p. 204.
*Brain Abscess. M. G. Peterman, Rochester, Minn.—p. 208.
Icterus Gravis of New-Born: Three Cases. P. Klemperer, New York.—p. 212.

Notification of Congenital Syphilis.—Experience in the treatment of congenital syphilis has convinced Findlay that the hope for its eradication lies in prophylaxis. But that such treatment can be carried out as extensively as is required necessitates the notification of syphilis, or at least the notification of congenital syphilis.

Colloidal Gold Reaction in Congenital Syphilis.—Grulee finds that in congenital syphilis, the colloidal gold reaction in the spinal fluid may assume at times the same degree as that shown in cases of paretic dementia. In this series, this occurred twice in cases of syphilitic meningitis. Congenital syphilis varies rather frequently from the usual reaction, that is, a fluid which shows the greatest reaction in dilutions of 1:40 and 1:80. There is no regular agreement between the blood Wassermann and the Wassermann and colloidal gold reactions in the spinal fluid. There may be a strong reaction both to the Wassermann and to the colloidal gold solution in the spinal fluid with a negative blood Wassermann. Tuberculous meningitis more nearly conforms to the reaction with greatest intensity in dilutions of 1:160 and 1:320. It may, however, vary considerably from this in certain cases showing a progressive variation as the meningitis extends. Other conditions which clinically may be easily confused with tuberculous meningitis, may show a colloidal gold reaction not dissimilar from that which is seen in certain cases of tuberculous meningitis. There is no definite reaction in most cases of idiocy and epilepsy.

End-Results of Epidemic Encephalitis in Children.—Sixty-one cases of residual epidemic encephalitis in children under 14 years of age were studied by Kennedy. Fifty-two of the patients were traced from the time of their first visit until the present. Twenty-one, sixteen of whom were traced, presented the parkinsonian syndrome. None was improved; the condition of two was stationary, and of fourteen, worse. One died from an intercurrent infection. The prognosis in this condition is not bad as regards life, but poor as regards improvement or recovery. Twenty-three had changes in behavior and personality. Six were improved, and seventeen showed no improvement, or had become worse. The lack of restraint exhibited by these children does not necessarily imply any great degree of mental impairment. Nineteen presented disturbances of sleep. Nine of these are now sleeping practically normally, three still show more or less disturbance, and seven are the same or worse. The respiratory syndrome occurred in this series much more commonly than is indicated by the literature. Two of seventeen children who had this sequela are well; three are apparently improving, and the condition of twelve is unchanged. In none has the condition become worse.

Transposition of Heart Ventricles.—Interest in the case cited by Shaw and Blake centers chiefly in the occurrence of a transposition of the ventricles in a left sided heart. It is of some practical importance that the occurrence of tympany in the right axilla over the area of normal liver dulness quickly led to the clinical diagnosis. Tympany in this location can mean only transposed liver or the presence of gas between liver and diaphragm. The latter was readily ruled out and the association of dulness in the left axilla quickly led to the correct diagnosis.

Brain Abscess.—The case reported by Peterman illustrates the difficulty encountered in the diagnosis of intracranial lesions. There was so little to suggest an abscess that the possibility of it was not considered in reaching a diagnosis. The abscess was situated in the left frontal lobe. The symptoms began when a second, smaller, abscess formed, by extension, from the initial lesion, and reached the surface. The differential diagnosis in this case included tuberculous meningitis, brain tumor and brain abscess. Brain abscess was not considered because there was no history of a previous infection of the skin, nose, throat, ears, or gastro-intestinal canal; there were no localizing symptoms, the lesion being located in the "silent area"; the increased cell count of the spinal fluid consisted mainly of lymphocytes. The positive tuberculin reaction, the history of phlyctenular conjunctivitis, the insidious onset, without antecedent acute infection, all point to a tuberculous involvement of the meninges, or to a possible tuberculoma. Clinically, a new growth could not be excluded. It was, therefore, rather a surprise at necropsy to find that the symptoms had been due to a staphylococcal abscess and not to a tuberculoma or cerebral neoplasm.

American Journal of Roentgenology and Radium Therapy, New York

12: 1-96 (July) 1924

Changes in Articular Surfaces in Tuberculous and in Pyogenic Infections of Joints. D. B. Phemister, Chicago.—p. 1.
*Lack of Positive Roentgen-Ray Findings in Low Back Pain. P. B. Magnuson, Chicago.—p. 15.
*Roentgen-Ray Studies of Feebleminded. M. W. Clift, Detroit.—p. 23.
*Hepatic Lesions in Patients Treated by Intensive Deep Roentgen-Ray Irradiation. J. T. Case, Battle Creek, Mich., and A. S. Warthin, Ann Arbor, Mich.—p. 27.
Relation of Blood Groups to Malignant Disease and Influence of Radiotherapy. G. E. Pfahler and B. P. Widmann, Philadelphia.—p. 47.
*Untoward Results in Radiation Therapy of Uterine Cancer When Complicated with Latent Gonococcic Salpingitis. B. F. Schreiner and L. C. Kress, Buffalo.—p. 51.
Mixed Radiation in Malignant Disease. D. Y. Keith, Louisville, Ky. —p. 53.
Inverse Square of Distance Law for Filtered Roentgen-Ray Radiation. G. M. MacKee and G. C. Andrews, New York.—p. 58.
Future Relations of Dental and Medical Professions. B. C. Darling, New York.—p. 67.

Roentgenoscopy of Back Pain Cases.—The relaxation of ligaments is primarily the cause of a large majority of acute and chronic back pains; infection, toxemia and trauma, combined with the anatomical variations in this region are responsible for acute back pains. Spondylolisthesis is a result of improper bony contact at the articulations or a loss of bony continuity in the neural arch of the fifth lumbar. In order to determine the cause of certain of these conditions, Magnuson says, roentgenograms will have to be taken at various angles, taking into consideration these anomalies before more definite information can be obtained on this subject.

Roentgenoscopy of Feebleminded.—The results of Clift's observations in the feebleminded have yielded little on which to base a theory as to basic factors involved. The roentgen-ray examination of the feebleminded shows a very high percentage of malformations and developmental defects of the skull, and in those cases associated with endocrine disturbances there are well marked changes in the process of bone development; and recognizable changes in the bony structure of the sella turcica are relatively uncommon even in those conditions in which the pituitary gland is involved.

Deep Roentgen-Ray Irradiation Causes Hepatic Lesions.—Study of three cases leads Case and Warthin to believe that intensive deep roentgen-ray irradiation of the abdomen of a degree producing well marked roentgen sickness produces lesions not only in the gastro-intestinal mucosa but also in the epithelium of the biliary tract, particularly in the medium

and smaller sized bile ducts. Some injury to the liver cells at the periphery of the lobules is also produced, but the microscopic appearances of this are much less evident than those of the damage to the bile ducts. The liver cells appear to be more resistant to the irradiation than the bile duct epithelium. The disturbance of hepatic function after irradiation may be explained by the changes found in these cases. The hepatic as well as the gastro-intestinal injury must be considered as a possible factor in the production of roentgen-ray sickness.

Roentgenotherapy Intensifies Salpingitis.—Schreiner and Kress have seen five cases in which there was lighting up of an old salpingitis by manipulation and insertion of radium into the uterus. They do not believe, however, that all cases of gonococcic infection complicating cancer of the uterus will cause such severe and disastrous results as are reported here.

Archives of Internal Medicine, Chicago

34: 137-266 (Aug.) 1924

*Mechanism of Angina Pectoris. W. D. Reid, Newton, Mass.—p. 137.
*Laboratory Studies in Epilepsy. I. Fractional Gastric Analysis. J. Felsen, New York.—p. 147.
*Cholesterol Content of Bile. H. L. Bockus and J. Eiman, Philadelphia. —p. 161.
*Vital Capacity of Lungs and Hyperthyroidism. C. A. McKinlay, Minneapolis.—p. 168.
*Nasal Accessory Sinuses of Cardiopathics. J. W. Miller, New York. —p. 177.
*Blood Phosphorus in Cancer and Anemia. T. E. Buckman, G. R. Minot, G. A. Daland and M. Weld, Boston.—p. 181.
*Mesothelioma of Pleura. I. T. Zeckwer, Boston.—p. 191.
*Clinical Value of Serum Tetrachlorphenolphthalein Test for Liver Function. R. Ottenberg, S. Rosenfeld and L. Goldsmith, New York. —p. 206.
*Clinical Studies on Venous Pressure. J. A. E. Eyster and W. S. Middleton, Madison, Wis.—p. 228.
Regulation of Renal Activity. IX. Effect of Unilateral Nephrectomy on Function and Structure of Remaining Kidney. T. Addis, B. A. Myers and J. Oliver, San Francisco.—p. 243.
Id. X. Morphologic Study. J. Oliver, San Francisco.—p. 258.

Mechanism of Angina Pectoris.—Evidence is given by Reid that in the circulatory adaptation to exercise there is a dilatation of the peripheral stream bed, and that this is brought about by the cooperation of the nervous system, probably by a reflex through the depressor nerve fibers of the vagus. This acts as a protective mechanism, as it permits the heart to contract without strain. A failure of this reflex dilatation of the peripheral arteries is suggested as the essential feature of angina pectoris. The sequence of events in angina pectoris may well be: a failure of the reflex dilatation of the peripheral vessels, which leads to a sudden rise in the pressure in the first part of the aorta and the cavity of the left ventricle; this heightened pressure in turn irritates the local nerve end plates which respond by pain referred to the arm, shoulder, etc.

Gastric Symptoms in Epilepsy.—The frequency of gastric symptoms in epilepsy occurring either as an aura or as a more or less continuous indescribable feeling of distress in the epigastric region prompted Felsen to make observations on fifty-three epileptics and thirty-seven other patients chosen at random as controls. Of the epilepsy group, eight cases (15 per cent.) showed complete absence of free hydrochloric acid in the fasting stomach, and for a period of two hours following the ingestion of a water test meal. Six others (11 per cent.) showed similar results, except that the absence of free hydrochloric acid fell somewhat short of the two-hour period. Sixteen (30 per cent.) showed absence or only slight traces of free acid in the first two or three specimens. Of the thirty-seven so-called nonepileptic control group, seven (19 per cent.) showed complete absence of free hydrochloric acid in all specimens. Five (13 per cent.) showed absence of free hydrochloric acid in the first two or three specimens. The absence of free acid in one patient closely observed for more than a year, seemed to be associated with rapid deterioration. In one patient, the absence of free acid did not seem to be associated with the onset of an epileptiform attack. The total acid curve remained uniformly low in all cases of absence of free acid. The absence of free acid may not be pathognomonic of epilepsy, but in Felsen's opinion this fact seems worthy of further investigation. Periodic gastric analyses of epileptics and more careful investigation of all neuropsychiatric cases showing anacidity are suggested.

Cholesterol Content of Bile.—Nonsurgical drainage of the gall tract, following the technic of Lyon, was performed by Bockus and Eiman on nineteen patients. The bile was segregated as accurately as possible into three fractions, Lyon's "A," "B" and "C" bile. A cholesterol determination was made on the "B" and "C" bile in each case. The results support Lyon's contention that the "B" fraction of bile, as obtained by nonsurgical drainage of the gall tract, does come in large part from the gallbladder. The cholesterol content of the "B" as compared with the "C" bile is of value in determining whether or not the gallbladder is emptying. It also serves as a fairly accurate gage of the bile concentration activity of the gallbladder and consequently of the presence or absence of gallbladder stasis.

Vital Capacity of Lungs in Hyperthyroidism.—Marked reduction of the vital capacity of the lungs below 70 per cent. occurred in twenty-four of fifty-seven severely toxic cases of hyperthyroidism studied by McKinlay. Reduced vital capacity of the lungs pointed more definitely to bad prognosis than did the degree of increase of the basal metabolism. The minute volume of pulmonary ventilation at rest was not a factor of the total capacity.

Maxillary Sinus Empyema in Cardiopaths.—Three cases of maxillary sinus empyema have been demonstrated post mortem by Miller in patients dying from cardiac disease. In none of these cases has the sinus involvement been recognized before death. The author regards a roentgen-ray examination of the sinuses as being very important in all cases of cardiac disease, but especially so in chronic valvular affections and in subacute bacterial endocarditis. The nasal chambers and accessory sinuses should be investigated thoroughly by a competent nose and throat specialist.

Blood Phosphorus in Cancer.—Buckman et al. failed to find the total phosphorus content and the inorganic phosphorus content of the whole blood, plasma and cells significantly altered in cancer. The total phosphorus content of the whole blood was roughly parallel to the hemoglobin content in all persons in whom the values for the total phosphorus in the plasma and corpuscles were within normal limits. The parallelism is due to the preponderance of phosphorus in the red corpuscles. Immature red cells probably contain more phosphorus than adult ones. The phosphorus quotient of Groebly and of Vorschütz and Vorschütz is said to be of no value in the diagnosis of cancer.

Mesothelioma of Pleura.—Zeckwer reports a case of primary malignant tumor of the pleura, enveloping the heart and producing metastases in the cerebrum and adrenal. Microscopically the cells presented three distinct types, spindle cells of fibroblastic morphology, epithelial-like cells forming channels, and cells producing globules of secretion. Transitions were made out between the three types, giving evidence that the cell of origin was a multipotential cell, which had the ability to differentiate both toward the epithelial and toward the fibroblastic type. Reasons are presented for considering primary malignant tumors of the pleura as being derived from the mesothelial cells of the pleura. Tumors derived from such origin should be considered in a class apart as mesothelioma, and not classified as endothelioma, carcinoma or sarcoma.

Tetrachlorphenolphthalein Liver Function Test.—In 103 cases tested by Ottenberg et al., Rosenthal's method has proved a valuable index of liver function. Its use in diagnosis has sharp limitations; it is valueless in cases of obstructive jaundice. The test was useful in detecting liver disease in sixteen cases, chiefly cirrhosis, metastatic carcinoma or cardiac decompensation. Its greatest value will probably be in early diagnosis of liver metastases and in early diagnosis of cirrhosis of the liver. It was of service in helping to exclude liver disease in eighteen instances, where findings other than jaundice has suggested that possibility. There were no false positive results. Two cases of duodenal ulcer showed slight retention. This, together with the fact that one case of cirrhosis at necropsy showed a healed duodenal ulcer, suggests chronic local infections as a possible cause

of cirrhosis. In five cases of proved liver lesions the test failed. Three were cases of hepatic syphilis in adults; one, a case of small cancerous metastasis. One case of extensive liver metastases, in which repeated tests gave negative results, remains unexplained. A positive test always means serious disability and in the absence of bile duct obstruction, a serious lesion of the liver. A negative test, however, does not always exclude the presence of serious liver lesions. The authors regard 5 per cent. of the dye in one hour serum as suspicious, and over 8 per cent. as conclusive of impaired liver function. The simplicity of the test, and the fact that absorption from the intestines and excretion by the kidneys are not complicating factors in it, recommend it for clinical use.

Venous Pressure.—The main conclusion reached by Eyster and Middleton from this work is that, excluding local causes of venous obstruction, abnormal venous pressures invariably mean cardiac failure, independent of the cause of failure or the associated disease.

Boston Medical and Surgical Journal

191: 283-332 (Aug. 14) 1924

Product of Medical Education. D. L. Edsall, Boston.—p. 283.
Treatment of Exophthalmic Goiter. G. W. Holmes et al., Boston.—p. 295.
Hypertension. F. R. Barnes, Fall River, Mass.—p. 301.
*Erythremia. T. B. Futcher, Baltimore.—p. 304.
Significance of Disturbances of Micturition. G. G. Smith.—p. 311.

Erythremia.—Futcher states that, although various measures may be efficacious in the treatment of erythremia, their action is transitory and the effect is purely palliative, as experience seems to show that no matter what measure is adopted there is a tendency of the blood count to rise later and for the subjective symptoms to return.

191: 333-380 (Aug. 21) 1924

*Mortality in Surgical Diseases of Children. G. D. Cutler, Boston.—p. 333.
*Calcium Metabolism of Infants. B. Hamilton.—p. 339.
*Pigment and Iron in Infant's Diet; Relation to Hemoglobin Formation. L. W. Hill, Boston.—p. 342.
Cod Liver Oil as an Antirachitic Agent. J. Garland, Boston.—p. 347.
*Juvenile Diabetes Treated with Insulin. C. F. Friedman, Boston.—p. 350.
*Responsibility of Medical Profession Toward Tuberculosis. J. B. Hawes, Boston.—p. 352.

Mortality in Surgical Diseases of Children.—Among the 4,989 cases admitted to four services on which Cutler bases his paper there were 138 deaths, a mortality of 2.7 per cent. Infection caused nearly one half the deaths. Empyema was the cause of the greatest number of deaths in this group, but there were 462 patients who admitted suffering from this disease, a number exceeded only by admissions for cervical adenitis (522) and the mortality is only 16.66 per cent. Acute appendicitis caused forty-one deaths, the second greatest number among the infections; yet the mortality figures only 11.45 per cent. because the disease was third in order of admissions (358). These figures included appendicitis with abscess and appendicitis with peritonitis, so that although the percentage is high there is some justification for it. Acute peritonitis, due to streptococcus and pneumococcus infection, produced a very high mortality: 23 cases, 13 deaths, a mortality of 56.52 per cent. Septicemia proved uniformly fatal in 12 cases. Tuberculosis is responsible for a large number of the cases included in this series. There were in all 52 patients with only 8 deaths, a mortality of 1.53 per cent. Congenital malformations constituted the second group of conditions in which mortality occurred (23 per cent.). Cleft palates were most numerous (402 cases); harelip was next (284 cases); then congenital pyloric stenosis (117 cases); spina bifida (110 cases); hypospadias (90 cases); harelip and cleft palate (74 cases); hydrocephalus (44 cases); atresia of anus (31 cases); megacolon (16 cases); malformation of intestines (15 cases); exstrophy of bladder (15 cases, some readmissions); obliteration of bile ducts (3 cases); patent urachus (2 cases). Malformation of intestines gave a mortality of 66.66 per cent.; patent urachus, 50 per cent.; obliteration of bile ducts and exstrophy of bladder, 33.33 per cent.; atresia of anus, 32.25 per cent.; hydrocephalus, 29.54 per cent.; spina bifida, 29.09 per cent.; megacolon, 25 per cent.; harelip and cleft palate, 12.16 per cent.; pyloric stenosis, 11.11 per cent.; harelip, 3.16 per cent.; hypospadias, 2.22 per cent.; cleft palate, 0.24 per cent. There were 56 deaths from intestinal obstruction, 10.83 per cent. of the total mortality. Intussusception was responsible for 39 of these deaths and during this seven year period 133 patients with this type of obstruction were admitted, giving a mortality for this condition of 29.32 per cent.

Calcium Metabolism in Infants.—The function of the calcium passing through the body is at present practically unknown. It is known that this constant flow of calcium is necessary, and it is usually spoken of as the calcium needed for maintenance. It is obvious, says Hamilton, that an increased demand for calcium needed for maintenance would make less calcium available for the growth of the bones, and it is conceivable that this is the case in those conditions (absence of sunlight, malnutritional disturbance) which play such an important rôle in the production of rickets.

Iron in Infants' Diet.—The purpose of Hill's paper is to attempt to show that there are good reasons for adding other foods than milk and cereal to the diet of infants during the second half year of life, but that these foods should be selected with a definite knowledge of what they contain and what purpose they serve. Hill discusses green vegetables (notably spinach), egg, potato, apple sauce, prune sauce and beef juice, all of these being added to the diet because of their iron content.

Insulin in Juvenile Diabetes.—A case of severe juvenile diabetes which was controlled by insulin is presented by Friedman. The case suggests that under proper supervision in hospitals more latitude can be taken in regard to the time for injection of insulin. An 11 year old child of average intelligence, with little or no parental supervision, was trained to manage successfully the dietary and insulin treatment of diabetes.

Control of Tuberculosis.—Hawes emphasizes these points: Exert influence to see that tuberculosis is given adequate attention in medical schools. Exert similar influence on governing boards of general hospitals to have special observation and diagnostic wards for tuberculosis. See that on the yearly program of state, county and local medical societies and associations of all kinds the subject of tuberculosis holds a place. Try to enroll the younger doctors, especially those just graduating from hospitals, in local tuberculosis work and make them do something and help in some way in the local tuberculosis problem even if it be very little.

Illinois Medical Journal, Oak Park

46: 77-152 (Aug.) 1924

Surgery of Thyroid. J. de J. Pemberton, Rochester, Minn.—p. 105.
Treatment of Pulmonary Tuberculosis. G. T. Palmer, Springfield.—p. 106.
Brain Tumors; Localization and Treatment. C. H. Frazier, Philadelphia.—p. 111.
Campaign for Lay Education. J. H. Hutton, Chicago.—p. 117.
Trend in Medical and Nursing Services. W. A. Pusey, Chicago.—p. 118.
Safeguarding Public Health. C. St. C. Drake, Chicago.—p. 125.
*Anomaly of Styloid Process Complicating Tonsillectomy. L. Thompson, Chicago.—p. 129.
*Insulin in Nondiabetic Children. O. Barbour, Peoria.—p. 131.
Full Time Clinical Teachers in Medical Education. C. L. Bonifield, Cincinnati.—p. 133.
Management of Infantile Eczema. W. A. Rosenberg, Chicago.—p. 137.

Anomaly of Styloid Process.—The styloid process in Thompson's case was 5 cm. long and 5 mm. in diameter at its attachment with the temporal bone, tapering down gradually to the width of approximately 2 mm. where it was attached to the hyoid bone.

Insulin in Nondiabetic Cases.—Insulin was administered by Barbour with apparently good results in twelve nondiabetic cases: two cases of malnutrition; two of malnutrition with tuberculosis; three of malnutrition with chronic bronchitis; one of marasmus; one of acute inanition; two of acute nephritis, and to one normal infant.

Indiana State Medical Association Journal, Ft. Wayne

17: 239-270 (Aug.) 1924

Anomalies in Diseases of Urinary Organs. H. G. Hamer and H. O. Mertz, Indianapolis.—p. 239.
Phlorizin Test in Diagnosis of Early Pregnancy. N. J. Eastman, Indianapolis.—p. 244.

Abdominal Emergencies. J. K. Berman, Indianapolis.—p. 246.
Major Surgical Obstetrics. G. B. Jackson, Indianapolis.—p. 249.

Iowa State Medical Society Journal, Des Moines

14: 347-394 (Aug.) 1924

General Paresis. S. T. Orton, Iowa City.—p. 351.
Tuberculosis of Cornea and Sclera. G. A. May, Des Moines.—p. 355.
Intra-Ocular Tuberculosis. E. G. Linn, Des Moines.—p. 358.
Eye, Ear, Nose and Throat Symptoms Due to Dental Pathology. F. E. Franchere, Sioux City.—p. 362.
Suppurative Pleurisy. H. A. Spilman, Ottumwa.—p. 364.
Diseases of Ischiorectum. A. P. Donohoe, Davenport.—p. 368.
Diseases of Myocardium. F. A. Willius, Rochester, Minn.—p. 370.
Operative Treatment of Fractures. F. J. Cotton, Boston.—p. 375.
Twenty Years' Obstetric Work in Country. A. H. Schooley, Terril. —p. 377.

Journal of Biological Chemistry, Baltimore

60: 237-479 (June) 1924

Buffer Mechanism for Calcion Concentration and Determination of Calcion Buffer Values. I. N. Kugelmass, New Haven, Conn.—p. 237.
Relation of p_H to Tungstic Acid Precipitation of Protein. A. T. Merrill, Washington, D. C.—p. 257.
Fat Excretion. II. Quantitative Relations of Fecal Lipoids. W. M. Sperry and W. R. Bloor, Rochester, N. Y.—p. 261.
Determination of Iodin in Food, Drink and Excreta. J. F. McClendon, Minneapolis.—p. 289.
Creatin Content of Brain. V. J. Harding and B. A. Eagles, Toronto, Canada.—p. 301.
*Blood Changes and Clinical Symptoms Following Oral Administration of Phosphates. H. A. Salvesen, A. B. Hastings and J. F. McIntosh, New York.—p. 311.
*Effect of Administration of Calcium Salts on Inorganic Composition of Blood. H. A. Salvesen, A. B. Hastings and J. F. McIntosh, New York.—p. 327.
Nutritional Requirements of Baby Chicks. IV. Chicks' Requirement for Vitamin A. E. B. Hart, H. Steenbock, S. Lepkovsky and J. G. Halpin, Madison, Wis.—p. 341.
Simple Micro Vessel with Electrodes for Estimating Hydrogen-Ion Concentration of Blood and Other Body Fluids. F. De Eds and P. J. Hanzlik, San Francisco.—p. 355.
*Uric Acid Problem. Experimental Study on Animals and Man, Including Gouty Subjects. O. Folin, H. Berglund and C. Derick, Boston. —p. 361.
System of Blood Analysis. Supplement V. Improvements in Quality and Method of Preparing Uric Acid Reagent. O. Folin and H. Trimble, Boston.—p. 473.

Effect of Administration of Phosphates.—The changes in the blood and the clinical symptoms of dogs to whom phosphate solutions were given orally have been studied by Salvesen et al. If alkaline phosphates were used, no change was observed in the calcium and inorganic phosphorus content of the blood. If acid phosphates were used, there was a marked increase in the serum phosphates, but no change in the calcium. Solutions of the same p_H as that of blood produced a marked increase in phosphates and a decrease in calcium of 0.5 mm. Larger doses of phosphates administered over a period of one or two days, produced violent symptoms, which had the characteristics of the so-called tetany and which were independent of the p_H of the solution administered. The serum phosphates increased to values varying between 2.5 to 3.9 mm.; the calcium decreased from values which ranged between 1.89 to 1.58 mm. There was also a decrease in the magnesium content of serum and in one instance a decrease in the blood sugar. The injection of calcium chlorid checked all the symptoms and produced an increase in the serum calcium. The authors conclude that the clinical symptoms (tetany), produced by the oral administration of phosphates, are due to a reduction of the blood calcium.

Effect of Administration of Calcium Chlorid.—The experiments reported on by Salvesen et al. show that the ingestion of calcium chlorid may produce a severe, uncompensated acidosis in dogs and human subjects with p_H values of 7.13 in a dog and 7.14 in a patient suffering from acute nephritis with edema. In two cases of Bright's disease with low blood calcium and low protein, calcium lactate, given orally, produced no characteristic change in the blood. The intravenous administration of from 0.5 to 1.1 gm. calcium chlorid had no effect on the acid-base equilibrium of the blood, but caused a moderate rise in the phosphates. The injected calcium left the blood in from three to six hours. There was no increase in the daily excretion of calcium in urine and feces over a period of six days following the injection.

Uric Acid Problem.—Folin, Berglund and Derick report at length the results of their experimental study on uric acid. These investigations were begun on the basis of the conviction that they could determine uric acid in blood with a precision unattainable in earlier work. When uric acid is injected into the blood stream of animals, the kidneys immediately take up very much uric acid. The kidneys at the same time become edematous and greatly enlarged. Up to fully 0.2 per cent. of uric acid may be temporarily stored in the kidneys. The uric acid which cannot find lodgement in the kidneys remains to a large extent in the circulating blood until it is destroyed; in other words, all the other tissues seem to be more or less completely impermeable to soluble urates. The destruction of uric acid in the dog, and presumably in all other animals, seems to take place within the circulating blood, though it is possible that some is destroyed in the kidneys. The destruction of uric acid within the circulating blood proceeds with extreme velocity during and immediately after an injection (100 mg. per kilogram), but soon slows down to a measurable speed, and the speed continues to diminish as the concentration of the circulating uric acid continues to sink. The uric acid destruction stops the instant the blood is removed from the living animal. Intravenous injections of uric acid (20 mg. per kilogram in the form of lithium urate) into normal men are followed by excretions of from 30 to 90 per cent. The destruction in man, therefore, amounts to from 10 to 70 per cent., the average being about 50 per cent. The losses (destructions) in man are variable because the two factors involved—speed of destruction and speed of excretion—are subject to independent variations. The excretion period in man lasts from one to four days. The duration is mainly determined by the speed of destruction. The unique and characteristic high levels of uric acid in normal human blood are due to a lack of responsiveness on the part of the human kidney. High protein diets increase the responsiveness of the kidneys and thus lower the level of circulating uric acid. The characteristic lack of responsiveness on the part of the human kidney is exaggerated in gout and this is the main or only reason why the gouty carry abnormally high levels of circulating uric acid. The uric acid-destroying process in the gouty is intrinsically about the same as in normal persons but is subject to wider variations. The distribution of injected uric acid is substantially the same in gouty subjects as in normal persons. Intravenous uric acid injections (20 mg. per kilogram) do not produce attacks in the gouty, but may produce enough temporary injury to the kidneys to result in a transient retention of other nitrogenous waste products than uric acid (increased nonprotein nitrogen and urea of blood). In normal persons no such retentions have been encountered.

Journal of Cancer Research, Lancaster, Pa.

8: 137-316 (July) 1924

*Multiple Primary Malignant Neoplasms. D. P. Seecof, New York.—p. 213.
*Treatment of Cancer of Lip by Irradiation. Report of One Hundred and Thirty-Six Cases. B. F. Schreiner and L. C. Kress, Buffalo. —p. 221.
Crown-Gall and Its Analogy to Cancer. E. F. Smith, Washington, D. C.—p. 234.
*Fundamental Harmonies and Differences Between Spontaneous Neoplasms and All Experimentally Produced Tumors. M. Slye, Chicago. —p. 240.
Quantitative Relations Between Factors Causing Cancer and Rapidity and Frequency of Resulting Cancerous Transformation. L. Loeb, St. Louis.—p. 274.
Experience with Water-Cooled Roentgen-Ray Tube for Deep Therapy. W. Stenstrom, Buffalo.—p. 285.
*Nucleocytoplasmic Ratio and Cancer. T. B. Robertson, Adelaide, Australia.—p. 292.
Vital Staining of Tumor Cells Exposure to Roentgen Ray. R. E. Prigosen, New York.—p. 305.

Multiple Primary Malignant Neoplasms.—Seecof reports a case of carcinoma of the lung and carcinoma of the rectum, each producing metastases. Sections of lung showed metastatic nodules of the rectal carcinoma, separate and distinct from the large primary carcinoma of the right lung. On the other hand, the primary lung tumor, in addition to growth in the regional lymph nodes, suprarenals and omentum, had metastasized to the pelvis, so that the unusual occurrence of

a primary lung tumor metastasis invading a primary rectal tumor could be demonstrated.

Roentgenotherapy of Lip Cancer.—Schreiner and Kress are convinced that they can demonstrate that epithelioma of the lip has been healed and remained healed over a more or less extended period of time by treatment with unfiltered roentgen rays. At least 34 per cent. of cases which have involvement of the lymphatics, but from the standpoint of surgery are considered in an operable class, can be healed by roentgen-ray therapy alone. From their experience with cases in which there is extensive involvement of the lymphatics, periosteum of the mandible and ulceration, they believe it is useless to treat by irradiation with any expectation of a cure.

Harmonies and Differences Between Spontaneous and Experimental Tumors.—Slye asserts that certain fundamental harmonies and certain fundamental differences exist between spontaneous neoplasms and all artificially produced tumors. The essential harmony in all these is the fact that all tumors, both spontaneous and experimental, have been shown to depend fundamentally on the inherited predisposition of the animal's tissues. In grafted tumors, the success of the experiment depends fundamentally on the inherited tendency of the animal's tissues to regenerate normally and furnish proper conditions of attachment and food, instead of abnormally as is the case in spontaneous cancer. In liver, stomach and intestinal tumors resulting from parasitic infestation, the success of the experiment depends on the inherited tendency of the animal's tissues to attempt regeneration under such irritation, and the violence of the method which overthrows such normal regenerative powers as the animal's tissues may possess, thus causing abnormal proliferation. Many animals and many strains thus far tested, both by artificially introduced and by normally ingested parasites, have been unable to regenerate the irritated tissues either normally or abnormally, and their organs have merely gone to pieces in degenerative changes. From tar painting, the same type of squamous-cell carcinomas of the skin arise as arise spontaneously from similar chronic skin lesions in mice, produced by many other causes, and in all probability when this type of experiment has been thoroughly tested out, the success of the experiment will be found to depend upon the inherited tendency to skin carcinoma, which could equally well be produced by other types of chronic attacks on a susceptible skin. The fundamental difference between spontaneous neoplasms and all artificially produced tumors seems to be that the spontaneous tumor is the product of the animal's own inherent metabolism; that is, the inherited tendency to regenerate abnormally under various assaults on the tissues; while, to date, all artificially produced tumors seem to indicate that the violence of the method may have overthrown inherent cancer-resistant mechanisms, with the probability at the same time of the overthrow of other vital fundamental metabolic mechanisms. These harmonies between spontaneous and artifically produced tumors give promise that it may be possible to strengthen the cancer-resistant mechanism, since there seem to be varied grades of such resistant mechanisms, and there are evidently resistant mechanisms that cannot be overthrown by the most violent and long-continued methods yet attempted.

Nucleocytoplasmic Ratio and Cancer.—The measurements, by Sokoloff, of the nucleocytoplasmic ratio in cancer cells, Robertson says, are in harmony with the view that cancer arises from the production of cells which are capable of undergoing division at abnormally low values of the nucleocytoplasmic ratio. In particular, they demonstrate that when such cells arise by asymmetrical mitoses, the daughter cell with the larger nucleocytoplasmic ratio is unable to multiply and is ultimately overwhelmed by the multiplication of the malignant cells, arising from the daughter cell which possesses the lower nucleocytoplasmic ratio.

Kansas Medical Society Journal, Topeka

24: 219-250 (Aug.) 1924

Fractures of Humerus. W. C. Campbell, Memphis, Tenn.—p. 219.
Treatment of Pulmonary Tuberculosis by Artificial Pneumothorax. C. O. Giese, Colorado Springs.—p. 222.
Head Pain of Nasal Origin. H. L. Scales, Hutchinson.—p. 225.
Trichinosis. C. N. Johnson, Wichita.—p. 230.

Laryngoscope, St. Louis

34: 593-672 (Aug.) 1924

Correction of Congenital Deformities of Nose. Report of Nine Selected Cases. J. D. Lewis, Minneapolis.—p. 593.
*Case of Pneumococcic Meningitis with Apparent Cure Followed by an Obscure Frontal Lobe Abscess. H. S. Wieder, Philadelphia.—p. 609.
*Lymphangioma of Larynx. R. Kramer and S. Yankauer, New York.—p. 621.
Case of Chronic Suppurative Frontal Sinusitis. N. P. Lobsenz, Paterson, N. J.—p. 630.
Occipital Abscess in Mastoid Disease. H. Dintenfass, Philadelphia.—p. 633.
*Use of Gentian and Acriviolet in Infections of Upper Respiratory Tract and Ear. J. H. Abraham, New York.—p. 637.
Atypical Mastoiditis—Case Report. J. M. Brown, Los Angeles.—p. 644.
*Deficient Vitamin Diets as Factor in Otolaryngologic Conditions. J. A. Stucky, Lexington, Ky.—p. 647.
Peanut in Bronchus Nine Weeks. Bronchoscopy. Recovery. T. R. Gittins, Sioux City, Iowa.—p. 655.
Investigation for Safer Instruments. S. L. Ruskin, New York.—p. 657.
Elevator for Submucous Resection. M. C. Myerson, Brooklyn.—p. 660.

Pneumococcus Meningitis with Frontal Lobe Abscess.—During the lifetime of Wieder's patient the brain abscess could not be located. The necropsy disclosed a frontal lobe abscess extending to the rolandic area and almost down to the temporal lobe. It measured 58 by 45 by 45 mm., contained thick greenish pus and was located 27 mm. from the anterior extremity of the right cerebral hemisphere. Laterally only 3 mm. of brain tissue separated the abscess from the subarachnoid space. Smears from the pus, however, showed long chains of gram-positive streptococci.

Lymphangioma of Larynx.—Kramer and Yankauer have observed two cases of lymphangioma of the larynx and one case of hemangioma and lymphangioma combined. Laryngeal examination revealed a definite sign of benign neoplasms of vascular origin, namely the "phonation sign," observed in both hemangiomata and lymphangiomata.

Gentian Violet and Acriviolet in Nose and Throat Infections.—Abraham reports good results from the use of gentian violet in the furunculosis of the auricle, ala nasi and skin, septal abscess; infections of the accessory nasal sinuses; of the external and middle ear; mastoid and throat; and Vincent's angina. In streptococcus infections of the pharynx, tonsils and larynx, it has proved of greater value than any other agent. In mastoid dressings, it has proved of value in clearing the infection and preventing further complications. It is also of use when applied within the nose and throat, following surgical procedures, either preventing infection or controlling infections when present.

Deficient Vitamin Diets in Otolaryngologic Conditions.—Stucky is convinced from clinical observations that the endocrine imbalance and decrease in the alkali reserve of the average case is due to improper feeding. In some schools and orphanages he has been able to prevent the usual post-festival epidemic of sore throats, noses and ears by carefully regulating the diet of the children during the season, keeping them away from the usual overindulgence of these festival occasions. He sees fewer cases of acute otitis media which require myringotomy for relief, fewer sore throats (tonsillitis), and a large decrease in running noses.

Medical Journal and Record, New York

120: 153-200 (Aug. 20) 1924

Chronic Diseases. E. P. Boas and W. H. Livingston, New York.—p. 153.
Radium Therapy in Gynecology. T. B. Bland, Philadelphia.—p. 156.
*Primary Sarcoma of Stomach. H. Klaus, Weehawken, N. J.—p. 161.
Gas Filtering Ventilator for Coryza and Asthma. G. N. Jack, Buffalo.—p. 164.
Foreign Bodies in Esophagus: Six Cases. J. Friedman and S. D. Greenfield, Brooklyn.—p. 168.
Simplified Transfusion Apparatus. W. F. Dutton, Philadelphia.—p. 171.
Retractor for Amputation. A. N. Turkus, Brooklyn.—p. 171.
Tetanus as Postoperative Complication. I. Kross, New York.—p. 172.
Deficiency of Halogens in Modern Dietetics. C. E. Carter, Los Angeles.—p. 174.

SUPPLEMENT

Islets of Langerhans and Functions of Pancreas. S. Vincent, London.—p. xlix.
Differential Diagnosis of Diseases of Thyroid Gland. N. W. Gillette, Toledo, Ohio.—p. liii.
Selective Tissue Action of Posterior Pituitary Gland. R. C. Mcehlig, Detroit.—p. lv.

Adrenalinuria. H. Friend, New York.—p. lix.
Endocrine Disturbances in Rhinologic and Laryngologic Cases. L. Hubert, New York.—p. lxiii.

Primary Sarcoma of Stomach.—Klaus performed a pylorectomy according to the Billroth type II method with a posterior gastro-enterostomy in his case. About two thirds of the stomach was removed. Convalescence was smooth and uneventful. The tumor proved to be a myofibrosarcoma. Examination of the patient eight months after operation showed him to be in excellent health. Up to the time this article was written there had been no evidences of a recurrence. He had gained 60 pounds in weight, had no gastric symptoms, and no abdominal pain. Hemoglobin was 95 per cent., red blood cells, 4,800,000.

Medical Journal and Record, New York

120: 101-152 (Aug.) 1924

Radium Therapy in Gynecology. P. B. Bland, Philadelphia.—p. 101. To be Cont'd.
Tuberculous Disease of Spleen. F. Reder, St. Louis.—p. 107.
Anaphylaxis: Relation to Clinical Medicine. H. M. Ray, Pittsburgh.—p. 110.
Case of Rat Bite Fever in Hawaii. J. A. Morgan, Honolulu, T. H.—p. 113.
Intracutaneous Vaccination Against Smallpox. J. H. Gettinger, New York.—p. 115.
Two Cases of Botulism. W. A. Kinkerton and J. Krobalski, Bayonne, N. J.—p. 117.
*Primary Malignant Tumors of the Liver. H. I. Goldstein, Camden, N. J.—p. 119.
Dietetic Treatment of Obesity. E. C. Cornwall, Brooklyn.—p. 124.

SUPPLEMENT

Psychanalysis of Organic Conditions. O. Rank, Vienna.—p. xxxiii.
Selection of Cases for Psychanalysis. A. Stern, New York.—p. xxxv.
Technical Problems in Psychanalysis. C. P. Oberndorf, New York.—p. xxxix.
False Confession. R. Reed, Cincinnati.—p. xliii .
Psychopathic Child. S. Brown, New York.—p. xlvi.
Encephalitic Features of 1921-1922 Epidemic Influenza. L. Moncalvi, Milan, Italy.—p. xlviii.

Primary Sarcoma of Alimentary Canal.—In a study of the literature of the world, the necropsy records of the University of Pennsylvania, reports from hospitals, clinicians and surgeons in all the large medical centers of the United States, Goldstein has been able to collect the following cases of primary sarcoma of the alimentary canal: liver, 59; pancreas, 20; gallbladder, 16; esophagus, 38; tongue, 66; stomach, 266; small and large intestines, 139; 18 of the appendix (including his own case); 66 of the spleen and 125 of the thyroid gland—about 813 cases in all. Cases of primary cancer and sarcoma of the liver are reported.

Missouri State Medical Association Journal, St. Louis

21: 173-208 (June) 1924

Cellular Reactions After Roentgen-Ray and Radium Therapy. H. R. Wahl, Kansas City, Kan.—p. 173.
Gynecologic Diseases of Interest to Internist. H. S. Crossen, St. Louis.—p. 177.
Syphilis. W. W. Graves, St. Louis.—p. 179.
Suspension-Extension Apparatus. J. G. Montgomery, Kansas City.—p. 189.

Philippine Islands Medical Association Journal, Manila

4: 209-250 (June) 1924

*Necropsy Incidence and Pathologic Lesions of Typhoid Fever in Philippine Islands. J. Z. S. Cruz.—p. 209.
Case of Diverticulum of Bladder. J. Eduque.—p. 215.
Typhoid Asthenia. A. J. Makalintal.—p. 219.
Common Whipworm as Health Hazard. L. Leiva.—p. 223.
Severe Case of Cerebral Hemorrhage from Industrial Accident. J. P. Celis.—p. 227.

Typhoid in Philippines.—Out of 10,185 consecutive necropsies performed in the city morgue of Manila during a period of more than sixteen years, 361 were typhoid cases, an average of one typhoid for every twenty-eight necropsies. The yearly and seasonal incidence shows a tendency to increase every year and a liability for typhoid mortality to occur every month. Although males are more susceptible to typhoid infection than females, yet the disease is as severe and as fatal to women as to men. The greatest susceptibility as well as the greatest mortality of typhoid can be said to occur between the ages of 15 and 25 years. The triad of the specific lesions of the disease is almost the same as that found in temperate climates except that the average enlargement of the spleen in this country is less. The involvement of the cecum occurred in one third of these cases, and of the colon in only one fourth, which indicates that the extent of the intestinal lesion has no direct relation to the mortality of the disease. This series shows an extraordinarily high percentage of intestinal perforation (15.6) and intestinal hemorrhage (11.9), about five times the incidence in temperate climates. The presence of adult ascarides in 47 per cent. of the perforated cases should be considered a possible responsible factor.

U. S. Naval Medical Bulletin, Washington, D. C.

21: 1-144 (July) 1924

U. S. Naval Pharmacist's Mates School. G. Pickrell.—p. 1.
Standardization of Quarterly Marks of Hospital Corps. O. J. Mink and J. A. McCormack.—p. 35.
Hospital Corps Instruction. G. W. Calver.—p. 41.
Direct Vision Cystoscopy. R. Hayden.—p. 65.
General Paresis. C. J. Stuart.—p. 68.
Wassermann Reaction. C. F. Behrens.—p. 72.
Color Test Not Reliable as Mental Test. R. H. Hunt.—p. 74.
Ludwig's Angina Following Double Peritonsillar Abscess. H. S. Cragin.—p. 76.
Specific Treatment for Chancroid. A. J. Chenery.—p. 78.

21: 145-264 (Aug.) 1924

Neurosyphilis. T. W. Raison.—p. 145.
Auricular Fibrillation. D. Ferguson.—p. 164.
Surgical Treatment of Sinusitis. G. B. Trible.—p. 174.
*Castela Nicholsoni in Chronic Amebic Dysentery. G. R. W. French and A. W. Sellards.—p. 184.
*Clearing Up Diphtheria Carriers. R. I. Longabaugh.—p. 190.
Preparation of Colloidal Gold. C. F. Behrens.—p. 191.
Case of Osteomyelitis of Dorsal Spine. R. I. Longabaugh.—p. 193.
Cause for Failure of Fracture and Amputation Stump to Heal. L. H. Williams.—p. 201.
Foreign Body in Appendix. G. A. Eckert.—p. 202.
Internal Derangement of Knee Joint. F. G. Merrill.—p. 203.

Castela Nicholsoni in Amebic Dysentery.—Sixteen cases of long standing amebic dysentery were treated by French and Sellards during an exacerbation with a preparation of *Castela nicholsoni*. The therapeutic results varied widely. In about one third of the cases, the symptoms and amebas disappeared in two or three days; in another third of this group the same improvement occurred but much less promptly; in the remaining third the results were poor. More precisely, the amebas disappeared in eleven of the sixteen cases, but on an average of about one week after treatment was discontinued cysts were found in the stools. The authors emphasize the importance of using potent preparations of castela. They have not, however, determined either the maximum tolerated dosage of this drug nor the total period of time for which it can be used continuously. In one case effective therapeutic doses were continued for nineteen consecutive days. In contrast to emetin and its derivatives, preparations of castela can be administered easily and pleasantly by mouth. It is an excellent stimulant to the appetite and patients tend to gain rather than lose weight while under treatment. In the authors' opinion, castela, when properly used, is equally or slightly more effective than emetin in amebic dysentery. Moreover, it can be employed without risk attendant in the use of maximal doses of emetin. Neither drug has proved adequate in chronic amebiasis, though castela merits much more investigation. In their opinion the refractory behavior of long-standing infections is probably due, in a large measure, to the extensive and deep-seated nature of the amebic lesions rather than primarily to the existence of a drug-resistant strain of amebas.

Clearing Up Diphtheria Carriers.—To remove the diphtheria bacilli from the throats of carriers, Longabaugh advocates a short series of ether inhalations. The inhalations are given by the open method every morning for about five minutes, sufficient ether being given to produce marked drowsiness.

Virginia Medical Monthly, Richmond

51: 265-326 (Aug.) 1924

*Human Anthrax; Shaving Brush Infections. W. B. Blanton, Richmond.—p. 265.
Therapeutic Problems of Old Age. T. R. Boggs, Baltimore.—p. 270.
*Case of Arsphenamin Dermatitis Treated with Sodium Thiosulphate. B. E. Harrell, Norfolk.—p. 274.

Meaning of Dementia Praecox. J. K. Hall, Richmond.—p. 276.
Treatment of Appendicitis in Children. B. M. Baker, Norfolk.—p. 280
Backache. C. B. Greear, Honaker.—p. 282.
Treatment of Pyelitis. R. C. Bryan, Richmond.—p. 284.
Ultraviolet Light. F. Hancock, Norfolk.—p. 289.
Squint. C. A. Young, Roanoke.—p. 292.
Sinusitis from Standpoint of General Practitioner. G. B. Trible, Washington, D. C.—p. 294.
Bladder in Gynecologic Diagnosis and Treatment. G. F. Douglas, Birmingham, Ala.—p. 299.
Therapeutic Application of Roentgen Rays. J. Shohan, Greensboro, N. C.—p. 302.
Hypertrophic Pyloric Stenosis in Child. T. S. Ussery, Norton.—p. 309.
Vincent's Angina Treated with Antimony Potassium Tartrate. R. A. Vonderlehr, Richmond.—p. 309.

Human Anthrax.—Blanton reports a case of cutaneous anthrax. About 130 cases are reported annually. Attention is directed to the shaving brush as the most fertile source for the sporadic dissemination of this disease.

Arsphenamin Dermatitis Treated with Sodium Thiosulphate.—No intravenous preparation of sodium thiosulphate being available, Harrell gave his patient an initial dose of 2 gm. by mouth followed by 1 gm. three times daily. At the end of forty-eight hours the temperature had dropped to 99 F. and the body was dry. The following day the temperature was normal, there was no moisture anywhere and the hands and feet were beginning to desquamate. On the seventh day the conjunctivitis had disappeared and the patient was walking about. Numbness and tingling, which had been very troublesome soon after admission, had also disappeared. He was discharged on the eleventh day. At this time desquamation was complete over body and was well advanced on hands and feet. The general condition was excellent.

FOREIGN

An asterisk (*) before a title indicates that the article is abstracted below. Single case reports and trials of new drugs are usually omitted.

British Journal of Dermatology and Syphilis, London

36: 285-334 (July) 1924

Acute Ulceration of Vulva. J. E. R. McDonagh.—p. 285.
Skin Sensitiveness to Proteins and Toxins. R. C. Low.—p. 292.
Scalp Ringworm in Adult. G. H. Lancashire.—p. 312.
Case of Leprosy: Apparent Cure. G. H. Lancashire.—p. 312.

British Journal of Ophthalmology, London

8: 305-352 (July) 1924

Concussion Changes in Military Practice. W. Lister.—p. 305.
Arrow Test for Astigmatism. E. E. Maddox.—p. 318.
Tuberculous Choroiditis Terminated by Meningitis and Multiple Brain Abscesses. T. M. Bride.—p. 320.
Intra-Ocular Sarcoma Causing Symptoms of Acute Hyalitis. T. W. Butler and E. W. Assinder.—p. 321.

British Journal of Radiology, London

29: 1-32 (Jan.) 1924

*Basis in Experimental Pathology for Radium Therapy of Malignant Disease. R. H. Parry.—p. 3.
Dislocation of Pisiform Bone. J. H. Mather.—p. 17.
Roentgen Ray and Radium Protection Committee.—p. 19.

Radium Therapy of Malignant Disease.—Parry sums up his review of this subject as follows: Considered from the point of view of practical application in treatment, both radium and roentgen rays have their advantages and disadvantages. Thus, the production of roentgen rays from a bulb supplies a far larger dose of radiation than the limited quantities of radium at disposal, but such roentgen rays are of lower penetrating power and the output varies from moment to moment. This is not the case where a radium salt is used for treatment, the half period of decay (2,000 years) being negligible, and even in the case of a tube of emanation the rate of decay is regular, so that the radiation value of such a tube is calculable with ease. Furthermore, application of radium implies a concentration of the radiations locally and a focus of irradiation of small bulk. This has its advantages when the mass of cancer is small, but is disadvantageous and inferior to roentgen rays when a large area requires equal irradiation. On the other hand, owing to this local concentration and greater penetration of the gamma rays, masses of growth refractory to roentgen rays may rapidly disappear with radium. Up to the present, radium has been tried mainly in the cases of inoperable malignant disease, and then often with markedly encouraging results. There have also been numerous disasters, partly due to inefficient technic, partly to failure to recognize contraindications for its application. An existing infection is aggravated, and associated with this a rapid increase in size of the growth may result; edema is intensified. The absorption of the products of destruction of the irradiated growth may result in acute general symptoms, and reported deaths after intense irradiations may possibly be ascribed to this cause. Too much stress cannot be laid on dosage where treatment with radium is concerned. To obtain the optimum result there exists no doubt an optimum dosage, so that growth of the neoplastic cells, but not their power for inducing active immunity, is destroyed, while at the same time the resulting damage to the host is a minimum. This dosage, as determined by time, quantity, and mode of application, varies for different tumors and even for similar tumors under different conditions and in different localities. Radium is a more delicate instrument than the knife, and not less potent for good or for ill.

29: 33-72 (Feb.) 1924

*Regeneration of Bone After Intensive Radiation of Malignant Disease. C. C. Anderson.—p. 37.
*Comparative Study of Normal and Malignant Tissues Grown in Artificial Culture. A. H. Drew.—p. 43.
*Traumatic Obturator Dislocation of Both Hips. J. H. Mather.—p. 61.
Observations on Passage of Barium Sulphate Meal in Twenty-Four Cases of Mental Disorder. R. V. Stanford and E. Goodall.—p. 63.
Orthometer. H. O. Gunawardene and S. Lilienstein.—p. 66.

Regeneration of Bone After Intensive Irradiation.—Two cases cited by Anderson show that continuity of a bone, the seat of a fracture caused by malignant disease—especially when sarcomatous in origin—can be restored by intensive radiation, whether the disease is primary or secondary.

Biologic Relations Between Tumor Parenchyma and Stroma.—The experiments reported on by Drew bring out very clearly the close biologic relations subsisting between tumor parenchyma and stroma. Although derived from the adult host in which the tumor is growing for the time being, the stroma of a transplanted tumor behaves in culture like an embryonic tissue rather than like that of an adult. The presence of stroma elements, although not necessary for the growth of the parenchyma in vitro, exerts a profound influence on it, and in particular partly determines the degree of differentiation reached by the tumor cells. Continued growth of normal and tumor cells in vitro is only obtained in the presence of substances so far only found in embryonic extracts. A salt mixture in which the calcium is present in the colloidal state can, with the addition of embryo extract, replace plasma for this work.

Traumatic Obturator Hip Dislocation.—While in a stooping position with legs apart, Mather's patient was struck on the lower part of the back by a sack of grain falling from a height. He lay on his back with the lower limbs abducted, slightly flexed and externally rotated at the hip joints. The adductor longus tendons were prominent and the heads of the femora could be palpated in the region of the symphysis pubis. On passive movement adduction was limited at once, internal and external rotation and extension were diminished. On radiographic examination the heads of the femora were shown dislocated downward and inward into the obturator foramina.

British Journal of Tuberculosis, London

18: 91-132 (July) 1924

Artificial Light Baths in Treatment of Tuberculosis. J. H. Sequeira.—p. 91.
Visit to Leysin. G. R. Girdlestone.—p. 95.
Training of Nurses for Care of Cases of Pulmonary Tuberculosis. P. W. Edwards.—p. 100.
Tuberculosis Problem in Scotland. J. Guy.—p. 102.

British Medical Journal, London

2: 163-218 (Aug. 2) 1924

*Biliary Infections: Diagnosis. D. P. D. Wilkie.—p. 163.
*Periarterial Sympathectomy. K. Black.—p. 165.

Biliary Infections.—Failure to detect and remove a stone from the common duct Wilkie believes to be the usual cause

of recurrent symptoms after operation, and, where doubt exists, incision and exploration of the duct should invariably be practiced. The condition of the pancreas, the appendix, the stomach, and duodenum must be investigated, as coincident lesions in these organs are by no means rare and may require to be dealt with, that complete recovery may follow. Only with good anesthesia and a free incision can the complete pathologic picture be displayed and adequate treatment be safely employed. Inadequate operation can only bring disappointment to the patient and discredit to surgery. The removal of several hundred gallstones will avail nothing if the one which was the real cause of the trouble be left behind. To remove one or more calculi and leave an infected, thickened, and functionless gallbladder may give the patient some relief but will not result in cure, and is evidence of a failure on the part of the surgeon to appreciate the intrinsic mural character of the gallbladder infection. Timely preoperative diagnosis and complete assessment of pathologic change at operation are the two essentials for the successful treatment of biliary infections.

Periarterial Sympathectomy.—Black reports ten cases in which periarterial sympathectomy was performed to good advantage. These cases were all cases of leprosy in which one or more ulcers on the foot or leg had failed to heal.

2: 219-258 (Aug. 9) 1924

Progress and Prospects in Chemotherapy. H. H. Dale.—p. 219.
*Latent Jaundice During Arsenobenzol Treatment. W. I. Gerrard. —p. 224.
*Posture in Difficult Labor. R. C. Buist.—p. 226.
Rôle of Practitioner in Preventive Medicine. P. MacDonald.—p. 227.
Sun Cure. H. J. Gauvain.—p. 234.

Latent Jaundice During Arsenobenzol Treatment.—It is suggested by Gerrard that the van de Bergh test, if used as a routine in cases of syphilis undergoing treatment by arsenobenzol compounds, affords a strong safeguard against the development of the grave condition of postarsphenamin jaundice, fatalities from which are more frequent than general mortality statistics would lead one to believe. The small amount of serum necessary for the test is readily obtained when taking the blood for the routine Wassermann reactions.

Posture in Difficult Labor.—Buist has found the knee-face posture to be much easier than the hanging leg position which has proved so irksome to the patient that it has not always been possible to maintain it for a sufficient time. Should it be found that the measure of its influence approximates to that of the hanging leg posture it would offer a valuable aid in the slightly narrow pelvis.

Irish Journal of Medical Science, Dublin

5: 293-338 (July) 1924

Intrathoracic Suppurative Conditions. T. G. Moorhead.—p. 293.
Protein Metabolism in Animal Body. W. R. Fearon.—p. 303.
Cases of Fur Dermatitis. W. G. Harvey.—p. 316.
Evolution of Diploma in Public Health. N. M. Falkiner.—p. 318.

Lancet, London

2: 203-256 (Aug. 2) 1924

*Relationships of Diseases of Gallbladder to Secretory Functions of Stomach and Pancreas. H. E. Griffiths.—p. 203.
Food Poisoning in Glasgow. W. R. Wiseman and A. S. M. MacGregor. —p. 208.
*Origin of Squint, Left-Handedness and Stammer. W. S. Inman. —p. 211.
*Debilitated Child. C. W. Vining.—p. 215.
*Phosphate Ratio in Mental Disease. W. Moodie and E. A. Boyd. —p. 218.
Case of Endocarditis Treated by Immuno-Transfusion. E. Wordley. —p. 219.

Gallbladder Disease and Functions of Stomach and Pancreas.—With the close developmental origin and nervous association of the gallbladder, pancreas, pylorus and first and second parts of the duodenum Griffiths says it must be expected that in their physiologic actions and pathologic reactions they are closely allied. Clinically, this is, perhaps, best exemplified by pylorospasm. Irritation of the mucous membrane of the gallbladder causes a reflex irritability of the vagus which is most marked by its action in the stomach, where an increase in the amount and acidity of the gastric juice is produced, associated with relaxation of the pylorus and regurgitation from the duodenum. Griffiths, in association with Mackenzie Wallis, has investigated this problem. Experimentally and clinically, working on hyperchlorhydria and regurgitation, they found hyperchlorhydria associated with regurgitation in 90 per cent. of cases of cholecystitis with or without the presence of gallstones. The duration of the inflammation and its degree are reflected in the intensity of the secretory deficit in the stomach. True hypochlorhydria occurring in inflammatory lesions of the gallbladder appears to be due to intercurrent disease, although it occurs regularly in advanced cases of carcinoma of the gallbladder. Speaking of pancreatitis, the authors assert that acute pancreatitis is generally a sequel of pancreatic lymphangitis. Here there is already congestion of the pancreas and a tendency to vomit. With spasm of Oddi's sphincter, a reflex from the originally infected gallbladder, there is regurgitation of bile into the pancreatic duct. Vomiting or straining may raise the pressure of the bile to 1,000 mm., and at this pressure some bleeding from the congested bile capillaries is bound to occur, causing liberation of the ferment trypsin whose activity is intensified fourfold by the presence of bile. It is not absolutely necessary to have regurgitation of bile to cause hemorrhage; this may and does occur through sheer congestion. Hence, it is evident that when infection occurs in the gallbladder a train is fired which always lights gastric fireworks, and may end in a pancreatic explosion.

Squint, Left Handedness and Stammer.—The points made by Inman are: first, that these conditions, hitherto regarded as separate and unrelated, appear to be determined by defects in the personality as a whole, and secondly, that the emotional difficulties of the child in meeting social demands have an importance which has till now been hidden from all save the psychanalyst.

Debilitated Child.—Problems in connection with the debilitated child are discussed by Vining. The histories and physical abnormalities of these children are examined, and the frequency with which the same type of sign and symptom occurs is pointed out. It is suggested that the signs and symptoms are due to two main factors, the one nutritional and the other toxic, the child's tonelessness being due to the former and many of the symptoms to the latter. The nutritional factor is said to be due to a long-standing dietetic defect, together with the results of a chronic intestinal dyspepsia, while the toxic factor is believed to be due to the absorption of toxins from the throat and bowel, emphasis, however, being placed on the latter as the probably more important source. It is suggested that the unhealthy throat is secondary to the general tissue cell defect brought by the nutritional factor. The relationship of tuberculosis, nervous disorder, and rheumatism to the debilitated state is examined. That the debility of these children is in the large majority of cases not due to tuberculosis is insisted on, although the possibility of strictly localized tuberculous infection in some group of glands cannot be altogether denied. It is believed that in cases in which such an infection exists that the infection is secondary to the preceding lowering of resistance and tone. A plea is put forward that the nervousness and nervous disorders of these children is secondary to the nutritional defect of the nerve cell and its irritation by toxins. Evidence is given to show that the rheumatic infection of childhood is in most cases ingrafted upon a preceding defect in health, which on analysis proves to be similar to the defects in health shown by the debilitated child, and it is suggested that in the prophylaxis and control of the rheumatic diseases the child's health in its earliest years is of the first importance, and emphasis is again laid upon the great importance of a well-balanced diet and the avoidance of chronic intestinal dyspepsia.

Phosphate Ratio in Mental Disease.—Three main conclusions are arrived at by Moodie and Boyd from an analysis of their results: (1) There is a definite type of confusional insanity which always shows the "acidosis reaction." This occurs at all ages, and the prognosis is usually good. (2) The numerical value of the phosphate ratio remains very constant for each case during the confused period. (3) An "acidosis

reaction" is not uncommon in excited states, but this does not apply to manic depressives. The phosphate ratio may, therefore, prove to be a valuable aid to prognosis, and we venture to submit these preliminary results in the hope that others may take up the work and that in this way a large mass of data may be collected. Several methods of combating the acidosis as a therapeutic measure have been devised, but it is, as yet, too early to express any definite opinion as to their efficacy.

2: 257-306 (Aug. 9) 1924

Progress and Prospects in Chemotherapy. H. H. Dale.—p. 257.
*Gastric Function Before and After Gastrojejunostomy. T. G. D. Bonar.—p. 261.
*Changes in Polarity of Fetus. A. L. McIlroy and D. Leverkus.—p. 267.
*Multiple Abortive Cases of Lethargic Encephalitis. C. O. Stallybrass and A. S. McNeil.—p. 271.
Five Cases of Epidemic Pleurisy. E. I. Lloyd.—p. 272.
*Case of Hernia of Ovary. W. H. Simmons.—p. 272.
Treatment of Hemorrhoids by Pitch Taken Internally. H. W. Webber.—p. 272.
Case of Rupture of Muscular Belly of Biceps Brachii Due to Direct Violence. G. A. Mason.—p. 273.

Gastric Function Before and After Gastrojejunostomy.—Several findings made by Bonar may be emphasized. Gastrojejunostomy allows the stomach to empty more quickly than usual (except in some few cases of duodenal ulcer). The meal leaves via the stoma and in only a very few cases via the pylorus as well. Particularly is the rate of emptying increased in cases of pyloric stenosis whether due to ulcer or growth, and this is very marked in cases of partial gastrectomy with gastrojejunostomy, where the meal passes at once into the jejunum. Gastrojejunostomy in cases of gastric ulcer causes a reduction in the free hydrochloric acid value, but the total acidity remains much as before. Gastrojejunostomy in cases of pyloric ulcer does not alter to any material extent the curve—a hyperchlorhydria still exists. In cases of ulcers with high acidities gastrojejunostomy does not cause to any extent a reduction of the acidity. In cases of carcinoma of the stomach gastrojejunostomy works in much the same way as in gastric and pyloric ulcers, depending on whether a gastrectomy has been carried out at the same time or not. Gastrojejunostomy is only indicated in cases of pyloric stenosis to act mechanically in providing an outlet for food. It relieves the pain caused by ulcer, but does not reduce acidity by allowing the entrance of bile into the stomach in cases of high acid-producing ulcers. There is a tendency for the formation of gastrojejunal or jejunal ulcers (three cases in 100 in Bonar's series) after gastrojejunostomy in cases with high acidity. Medical treatment will be required in all cases when a gastrojejunostomy has been performed in an attempt to reduce high acidity and to prevent gastojejunal ulcers. Gastrojejunostomy in pyloric and duodenal ulcers apparently does not cause a release from the pylorospasm, and even though bile enters the stomach in greater quantities than before operation it is not sufficient to cause a reduction in the acidity to a marked extent.

Changes in Polarity of Fetus.—The results of the investigations made by McIlroy and Leverkus show the value and importance of antenatal work. This investigation has not clearly disclosed the factors which influence pelvic presentations. Deformities of the fetus can be eliminated to a large extent as only one case of hydrocephalus was observed. The length and weight of the fetus, or the length of the umbilical cord, have been shown to be of little value as determinant factors in spontaneous version or in the prevention of version. Excessive liquor amnii may be a factor, but, as the percentage of cases was small, much importance cannot be given to it. Twins, for their better accommodation, have a tendency for one fetus to occupy the lower portion of the uterus with its pelvic pole. The occurrence of pelvic deliveries is frequently due to the premature onset of labor. Deformities of the pelvis are not a marked factor as only two were found in thirty-three pelvic deliveries. Other cases of pelvic contraction corresponded in frequency with those found in the control cases. There were twenty-one cases of induction of labor, mainly for fetal and pelvic disproportion or for cardiac and pulmonary diseases, eight in primigravidae and thirteen in multiparae. With two exceptions the disproportion cases resulted in head deliveries. While abnormal presentations can, in some cases, be assigned to specific causes, no reason can be ascribed for the vast majority.

Multiple Cases of Encephalitis.—Multiple cases of encephalitis in one house are very rare. Stallybrass and McNeil report several such instances. In one household four cases which were regarded as encephalitis occurred, in another three cases affecting three generations, and in a third household the father and son-in-law were affected. In the first two instances attention was directed to the household through the occurrence of one well-marked case. On inquiry, other and preceding cases came to light for which medical advice was not sought. In all instances, however, the occurrence of nystagmus (in eight of nine cases) or other focal signs points to the sickness from which they had been suffering as having also been encephalitis.

Hernia of Ovary in Child.—Simmons reports the case of a girl, aged 3, who had a small lump in the groin for about a year. On examination a movable oval tumor, about half an inch in length and a quarter of an inch in width, was felt at about the position of the right external ring. There was little or no sensibility to be demonstrated. It rolled easily under the skin, but could not be moved over the deep structures. There appeared to be a slight impulse on crying. At operation the tumor proved to be the ovary.

2: 307-360 (Aug. 16) 1924

Recovery Process in Isolated Muscle. A. V. Hill.—p. 307.
*Epinephrin Treatment of Stokes-Adams Attacks. J. Parkinson and C. W. C. Bain.—p. 311.
Mental Defect and Mental Degeneracy in Rural Area. G. K. Bowes.—p. 313.
Blindness and Other Ocular Defects Due to Nasal Disease. G. W. Dawson.—p. 318.
*Early Pericardotomy in Treatment of Pericarditis. R. Brooke.—p. 319.
Treatment of Epilepsy with Dialacetin. S. H. Hall.—p. 320.
*Traumatic Gangrene of Foot Complicating Fractured Fibula. J. B. G. Muir.—p. 321.
*New Form of Suture Material. D. McIntyre.—p. 322.
Development of Auricle on Second Branchial Cleft. S. Mort.—p. 322.

Epinephrin in Stokes-Adams Disease.—In the case described by Parkinson and Bain, there appears to have been an acute lesion of the myocardium involving the auriculoventricular bundle, with a rapid onset of heart block, and a period of complete dissociation followed by a more gradual recovery of conduction. Stokes-Adams attacks occurred in all three phases, but much the greater number took place during recovery of conduction. Opportunity was therefore afforded for studying the action of epinephrin both when the block was partial and when it was complete. On the twelve occasions on which it was used, with one doubtful exception, it abolished the attacks within three minutes; and freedom from attacks was maintained from two to forty-eight hours from the time of injection. On four recorded occasions when partial block was present, the auricular and ventricular rates both increased to 120 and normal auriculoventricular sequence was restored. When complete block was present and the ventricular rate was slow, this was increased to about 60, but the block remained complete. On one occasion, when the ventricular rate was already 60 before the injection, no increase in rate took place.

Pericardotomy for Pericarditis.—Thirty-six cases of pyopericarditis secondary to osteomyelitis have been recorded in which drainage of the pericardium was performed. Recovery after operation took place in two instances only. In both these cases the primary disease of bone was operated on at a comparatively early stage, and the pericardium was drained before the effusion had become purulent.

Traumatic Gangrene of Foot.—In Muir's case the gangrene was caused by a wound in the first part of the posterior tibial artery, above the origin of the peroneal branch. The proximal part of the vessel contained an organizing clot which had obviously extended back to the division of the popliteal. At the seat of the fracture the anterior tibial was also injured. This lesion seemed to be more of a bruise which had caused rupture of the inner coat, and the proximal portion of the vessel contained clot. Section of each vessel showed no arterial disease, the lumens of each containing organizing thrombi.

Catgut and Silk Combined Suture Material.—The material described by McIntyre consists of a combination of catgut and silk. The catgut is hardened to twenty-day muscle duration, and forms the greater bulk of the suture. Two or more strands of very fine silk are incorporated in the surface. The silk on the surface makes the material easy to handle and eliminates slipping of the knot. The bulk of the suture is absorbed, but the fine strands of silk remain, and so variations in the rate of absorption of the catgut do not constitute a danger.

Annales des Maladies Vénériennes, Paris

19: 481-560 (July) 1924

Pustulo-Ulcerating Balanitis. L. M. Pautrier and Rietman.—p. 481.
Comparative Study of Dold's Test. G. Cornaz.—p. 488.
*Resistance Reaction in Syphilis. H. Gougerot and P. Fernet.—p. 502.
Treatment of Phagedena in Syphilitics. Carle.—p. 506.
Racial Resistance to Arsphenamin. E. Orphanidès.—p. 510.
Chancroid in Natives of Algeria. Montpellier and Benzecri.—p. 514.
Disinfection in Urology. Catzeflis.—p. 519.

Resistance Reaction in Syphilis.—Gougerot and Fernet report a case of syphilis in which arsphenamin was not only ineffectual, but each of the four injections was followed by exacerbation of the papular eruption. This testified to the local struggle in each papule between the spirochetes and the arsenic. This reaction, which they call *réaction de résistance* is caused, they say, by excitation of the parasites which resist and secrete more toxins. Further factors are the destruction of some of them, the bacteriolysis inducing sensitization, and the stimulation, although inadequate, of the tissues to a defensive reaction. As the spirochete is not destroyed, the papule is still active, and the eruption keeps progressing. It differs from Herxheimer's reaction in that it is a reaction of resistance on the part of the bacteria and of the tissues. Treatment with bismuth in the case described arrested the local reaction.

Archives des Maladies de l'App. Digestif, Paris

14: 455-550 (June) 1924

*Idiopathic Dilatation of Esophagus. R. Grégoire.—p. 455.
*Electrotherapy in Constipation. L. Delherm and A. Laquerrière—p. 470.

Idiopathic Dilatation of the Esophagus.—Grégoire recalls that only the tracheal and thoracic segments of the esophagus are involved, the lower limit of the dilatation corresponding to the esophageal opening in the diaphragm. An operation on this part of the esophagus may be performed by a combined technic through chest and abdomen, avoiding the pleura and peritoneum.

Electrotherapy in Constipation.—Delherm and Laquerrière consider electrotherapy as most advisable in chronic constipation, explaining its action not as a purgative, but by functional reeducation of the intestine. Various combinations with radiotherapy and diathermy are indicated in constipation associated with asthenia, painful adhesions, bladder spasms, fissure or hemorrhoids, and in constipation connected with gynecologic or prostatic affections.

Bulletin de l'Académie de Médecine, Paris

92: 943-966 (July 29) 1924

Determination of Glycolytic Insufficiency. C. Achard.—p. 949.
*Transient Arrest of Heart. C. Achard and J. Thiers.—p. 952.
*Vaccine Therapy in Empyema. G. Vallet and A. Augé.—p. 958.
Relief in Monocular and Stereoscopic Vision. J. H. Jarnier.—p. 962.

Roentgen Kinematography of Effect on the Heart of the Oculocardiac Reflex.—Achard and Thiers report a case of diphtheric paralysis, in which the oculocardiac reflex from compression of the eyeball arrested the heart action completely for two or three seconds. The image of the heart was recorded with a kinematograph. The slight bradycardia, from which the patient suffered permanently, and the arrest of the heart are explained by paralysis of a sympathetic center.

Vaccine Therapy in Empyema.—Vallet and Augé observed twelve patients with empyema; six were treated with an autogenous vaccine. A fatal issue occurred in four cases, in which vaccine therapy was not employed, three after operative intervention. All the six patients treated with vaccines recovered.

Gynécologie et Obstétrique, Paris

10: 1-80 (July) 1924

Early Cancer in Adenoma of Uterine Cervix. H. Hartmann et al.—p. 1.
*Intestinal Ptosis and Childbirth. J. Okinczyc.—p. 8.
*Glycogen in Fetus and in Placenta. R. Clogne et al.—p. 23.
Ligation in Treatment of Uterine Cancer. T. Astériadès.—p. 25.
Kielland's Forceps. G. Barbaro.—p. 36.

Enteroptosis and Childbirth.—Okinczyc's opinion is that a normal pregnancy does not produce splanchnoptosis. But ptosis and intestinal stasis may be a cause of sterility, owing to relaxation of organs and retrodeviation of the uterus. An important part is attributed to chronic appendicitis in childhood and in adolescence, the colon bacillus infection causing enterocolitis with toxic action on the nervous apparatus of the bowel, with dynamic disturbance in the intestines, their relaxation and atony. While an appendectomy alone may be indicated in children, it may be necessary in adults to combine this operation with colopexy and sigmoidostomy to relieve the intestinal stasis, and to insure normal conditions in pregnancy.

Glycogen in Fetus and in Placenta.—Clogne, Welti and Pichon's research proved that the amount of glycogen in the liver of a fetus is continuously increasing from the third month (1.80 gm.) to the end of pregnancy (29.55 gm.). The reverse is observed in the placenta (2.75 gm. at three months, and 0.75 gm. at the ninth month).

Journal d'Urologie Médicale et Chirurgicale, Paris

17: 449-540 (June) 1924

Permanent Catheterization of the Ureter. J. Creyssel.—p. 449.
*Latent Renal Calculi. R. Lanzillotta.—p. 466.
*Asthma of Genital Origin. L. Strominger and Birmam-Bera.—p. 472.
Calculus in Prostatic Urethra. S. Israel.—p. 475.

Latent Renal Calculi.—Lanzillotta noted concretions in the kidneys of nine patients (out of forty-six operative cases), in whom the symptom pain was absolutely absent. In cases with an old history suggesting the possibility of a renal calculus, or in hematuria with an uncertain diagnosis, and in pyuria, only radiography may reveal the renal cause of the disturbances.

Asthma of Genital Origin.—Strominger and Birmam-Bera describe a case of asthma in a man, aged 32, the paroxysms occurring two or three days after each intercourse, and persisting for about three days. The patient recovered completely after light cauterization of the inferior turbinate bone. A double reflex arc, genitonasal and nasopulmonary, is assumed.

Policlinico, Rome

31: 1001-1032 (Aug. 4) 1924

*Plastic Induration of Penis. F. De Napoli.—p. 1001.
Foreign Bodies in Esophagus. P. Masotti.—p. 1007.
Foreign Body in Stomach. F. Trojano.—p. 1008.

Plastic Induration of Penis.—Napoli has encountered six cases of sclerosis of corpora cavernosa in the twenty-five years of his practice. The resulting impotentia coeundi depends rather on the site than on the extent of the induration. A very small lesion may cause a marked deviation, called by Ricord "strabismus of the penis." The author believes that one group of such cases is due to a neuro-arthritic constitution.

31: 1065-1094 (Aug. 18) 1924

*Hemiplegia in Typhoid. G. Tizianello.—p. 1065.
Prevention of Neurosyphilis. G. Pellacani.—p. 1070.

Hemiplegia in Typhoid.—Tizianello observed two cases of hemiplegia in typhoid fever. One patient recovered, the other died. There was ischemic necrosis in the right lenticular nucleus and multiple peripheral and visceral areas of necrosis, most pronounced in the paralyzed extremities.

31: 417-460 (Aug. 1) 1924. Medical Section

*Intestinal Amebiasis in Italy. T. Pontano.—p. 417.
Tumors of Suprarenals. P. Filippella.—p. 449.

Intestinal Amebiasis in Italy.—Pontano observed 150 patients with intestinal amebiasis. He believes that a good examination of fresh specimens of feces is necessary in every patient with diarrhea. The disease lasts for years, diarrhea alternating sometimes with constipation, and it causes many

subjective disturbances, usually diagnosed as chronic appendicitis, cholecystitis, spastic colon, dyspepsia or duodenal ulcer.

Rivista di Clinica Pediatrica, Florence

22: 505-576 (Aug.) 1924

Specific Treatment of Tuberculosis. P. Brusa.—p. 505.
Infant Mortality at Cagliari. A. Cardia.—p. 527.
*Recurrence of Scarlet Fever. E. Boschi.—p. 548.

Recurrence of Scarlet Fever.—Boschi reports a case of recurrence of scarlet fever, and discusses thirty-nine other cases from the literature. He believes that some of them are not due to extraneous reinfection. The germs remaining in the patient may cause it, especially in children with the lymphatic constitution.

Archivos Latino-Amer. de Pediatría, Buenos Aires

18: 241-336 (June) 1924

*The Newly Born in Argentina. J. C. Navarro.—p. 241.
Sarcoma of Mesentery. Orrico and Moyano Navarro.—p. 247.
*Peritonitis from Congenital Syphilis. J. M. Valdez, Jr.—p. 255.
Organization of Child Welfare Work. C. Ferreira.—p. 259.
*Chronic Rheumatism in Child. F. Bazán.—p. 283.
Pulmonary Tuberculosis in Young Infant. M. Armand Ugón.—p. 237.
Hemophilia in Boy. J. Bonaba.—p. 290.
Otitic Cerebellar Abscess. L. M. Petrillo.—p. 295.
Heliotherapy. Moncorvo, Jr.—p. 298.

Size and Weight of New-Born Infants in Argentina.—Navarro relates that the average weight of 370 newly born infants at Buenos Aires was 3,255 gm. (3,310 for the 197 boys and 3,193 for the 173 girls).

Tardy Chronic Peritonitis from Congenital Syphilis.—Valdez' patient was a girl, aged 8, who for nine months had complained of occasional abdominal pains. A tumor was palpated, and constantly recurring ascites compelled repeated tapping. Under mercurial treatment the symptoms subsided completely. The clinical picture had deceptively simulated tuberculous peritonitis except for the lack of fever and the persistently good pulse.

Chronic Rheumatism in Boy.—The chronic rheumatism in the knees of the child, aged 4, was ascribed, by exclusion, to congenital syphilis although no benefit was realized under specific treatment. The joint lesions of inherited syphilis are often rebellious. The roentgen findings in the aorta and the good general condition confirmed the syphilitic origin.

Brazil-Medico, Rio de Janeiro

2: 67-82 (Aug. 2) 1924

*Addison's Disease in Malaria. Areobaldo Lellis.—p. 67.
Bismuth in Treatment of Gonorrhea. J. Romualdo Costa.—p. 68.
Congenital Impermeability of Lacrimal Passages. E. Campos.—p. 71.
Secondary Cataracts. G. de Andrade.—p. 72. Conc'n.

Addison's Disease of Malarial Origin.—The extreme weakness and bronzing developed in the young man a few weeks after acute malarial infection. The Addison symptoms completely disabled the patient, but at the fourth month from the first onset of the malaria, epinephrin was given systematically, and in three weeks the earning capacity was quite restored. Quinin had not been taken after the epinephrin was started, the successful outcome testifying that the suprarenals had been injured by the malaria in the first place, and the functional insufficiency had persisted after quinin had cured the malaria. Under the epinephrin, the suprarenals were given a chance to recuperate, and clinically normal conditions were soon restored.

2: 83-106 (Aug. 9) 1924

*Stab Wound of Abdomen. A. Paulino.—p. 83.
*Pathologic Physiology of Diabetes. A. L. Pimenta Bueno.—p. 85.

Stab Wounds of the Abdomen.—Paulino protests against the common practice of probing a stab wound. This was done by the pharmacist into whose shop the man was carried in the case described; a little later it was done anew by the physician called to the case, and a third time by the intern in the hospital. Each of these found the tissues resistant beneath, and declared that the wound was superficial and harmless, when in reality the stab had been slanting and the bowel slashed. Even if the intestine has not been actually perforated, the probing may make the perforation complete.

Pathologic Physiology of Diabetes.—Pimenta Bueno asserts that vasocontriction of the capillaries in the liver explains hyperglycemia, polyuria and glycosuria. He traces the mechanism of this through the phenomena of induced diuresis, pregnancy glycosuria, etc. Diabetes predisposes to tuberculosis, as the diabetic have a tendency to congestion in various organs to which the blood is diverted owing to the vasoconstriction in the capillaries of the liver. The congestion may be in the kidneys, lungs or elsewhere, but in the lungs it invites tubercle bacilli. The mechanism is like that when pneumonia or hemoglobinuria follows a chilling.

Gaceta Médica de Caracas

31: 161-176 (June 15) 1924

*Cancer of Uterine Cervix. R. Soto G.—p. 161. Idem. E. Razetti.—p. 167. Idem. Rivas Morales.—p. 168.
Medical Geography of Yuruary. E. Oxford.—p. 170. Cont'n.

Cancer of the Uterine Cervix.—Soto operated only in sixteen of his total forty-seven cases. Although several were hopelessly advanced, 56.25 per cent. were cured by the operation, the interval since in six cases being from thirteen to four years. This group includes two cases in which the cancer was removed by the vaginal route, although generally he follows the Wertheim method. There has been recurrence in 18.75 per cent., and 12.5 per cent. succumbed to hemorrhage during the operation.

Lisboa Médica, Lisbon

1: 65-136, 1924

Infant Feeding with Moro's Modification of Butter-Flour Mixture. L. de Castro Freire.—p. 65. Conc'n, p. 182.
Platelets and Megacaryocytes in Chronic Granulocytic Leukemia. J. J. Martins Pereira.—p. 92.
*Amputation of the Breast. Vasco Palmeirim.—p. 107.
Diagnosis of Hydatid Cyst. A. Morais David.—p. 112.

Amputation of the Breast.—Palmeirim states that at the Lisbon surgical clinic the woman's arm is fastened to the headboard of the bed after amputation of the mamma. After the first twenty-four hours the arm is released, and the patient is encouraged to move the arm freely to the maximum, which can be then done without strain. This early exercising of the arm has been applied since 1913 in 116 cases, and the parts have always healed elastic and movable on the deeper planes. He gives illustrations of one case, taken at the forty-eighth hour.

1: 137-208, 1924

Histophysiology of the Thymus. A. Celestino da Costa.—p. 137.
*Follicular Cyst in Upper Jaw. A. Pereira Varela.—p. 148.
*Loose Bodies in Joints. Amandio Pinto.—p. 168.

Follicular Cyst in Upper Jaw.—Varela discusses the etiology of these cysts, protesting against the term "dentigerous," and describing a personal case.

Loose Bodies in Joints.—In Pinto's case the woman, aged 32, had 500 loose bodies removed from the right knee at the first operation, and eighty-eight more at a second intervention. The cure has been complete since. There had been symptoms from the knee for two years.

1: 265-328, 1924

Modern Views on Diabetes. Pulido Valente.—p. 265. Conc'n, p. 329.
Anaphylaxis from Clinical Standpoint. N. de Bettencourt.—p. 284. Conc'n, p. 353.
Classification of Psychoses. Sobral Cid.—p. 295. Begun, p. 209.

1: 329-376, 1924

*Treatment of Angiomas. L. de Castro Freire.—p. 340.

Treatment of Angiomas.—The infant, aged 3 months, had twelve large angiomas scattered over the body. Each angioma was exposed for an hour and a half to 40 mg. of radium bromid, and the series was repeated twice at two month intervals. The child was robust, but developed severe anemia after the radium treatment, with marked leukopenia, but no hemorrhagic tendency, and the spleen and liver were not enlarged. De Castro Freire believes that the radium exposures had a toxic action on the blood-producing organs. The numerous fields exposed brought the hematopoietic organs directly under the influence of the rays. The anemia disappeared in two months.

Prensa Médica Argentina, Buenos Aires

11: 161-196 (July 20) 1924

*Gastric Ulcers with Achylia. C. Bonorino Udaondo.—p. 161.
Training for Social Service Visitors. Carbonell.—p. 164.
*Tar Cancer in Rabbits. A. H. Roffo.—p. 168.
Etiology of Dysmenorrhea. J. E. Massun and E. E. Anselmi.—p. 179.
Arterial Hypertension. H. Vaquez.—p. 186.

Gastric Ulcer with Achylia.—Bonorino Udaondo has encountered fifteen cases of gastric ulcer with complete achylia. It was usually accompanied by arterial hypotension, bradycardia, general asthenia or chronic constipation, and in two of the cases by phosphaturia. The symptoms from the ulcer were generally milder than in cases with normal or excessive acidity. The chemistry of the stomach did not change after the ulcer had healed under medical or surgical measures, confirming its constitutional character. Sippy treatment is of course irrational and dangerous in these achylia cases, but he always had good results with small doses of sodium chlorid and sodium citrate or phosphate, associated with sedatives and dieting.

Tar Cancer in Rabbits.—Roffo reports that well developed cancers were obtained in three of the six rabbits treated with tar. The course of the malignant transformation of the tissues under the tar can be traced in his fourteen photomicrograms.

11: 197-224 (July 30) 1924

Improved Forceps. Llames Massini.—p. 197.
*Refractometry in Malignant Disease. A. H. Roffo.—p. 200.
Revision of Anatomy of Aponeuroses of Leg. Brachetto-Brian.—p. 203.
Tracheocele from Congenital Syphilis. D. S. Cuneo.—p. 214.

Refractometry in Cancer.—Roffo's tables show 1.35018 as the average refractometric index of the blood serum in thirty-nine cancer patients (proteins 8,293), while the average in thirty-nine other patients, free from cancer, was 1.34898 (proteins, 7,523).

Semana Médica, Buenos Aires

2: 281-348 (Aug. 7) 1924

*Functional Test of the Kidneys. Roque A. Izzo.—p. 281.
Decompressive Trephining. R. E. Donovan.—p. 289.
*The Blood Pressure in Aortic Insufficiency. J. R. Goyena.—p. 298.
*Cephaloplegic Syndrome in Children. J. B. Ormaechea.—p. 299.
*Trachoma in Argentina. A. Barbieri.—p. 303.
*Traumatic Meningo-Encephalitis. J. E. Olmos.—p. 313.
Occupational Injuries. J. C. Belbey.—p. 318.
Recurring Fungous Tumor in Conjunctiva. J. Lijó Pavía.—p. 326.
Phlorizin Glycosuria in Diagnosis of Pregnancy. R. Mestre.—p. 331.
Stenosis of Esophagus and Radium Treatment. C. Heuser.—p. 333.

Functional Tests of the Kidneys.—Izzo applied the phenol-sulphonephthalein test to thirty-eight patients by both the intravenous and the intramuscular routes. With healthy kidneys the findings are parallel unless there is delay in absorption of the dye from the muscle. This is liable to occur under various conditions, and hence the intramuscular route is not dependable unless the outcome by both routes is alike. His experience confirms that 70 per cent. of the dye eliminated is the limit for good functioning; below 60 per cent. the function is bad, and between 60 and 70 per cent. testifies to slight insufficiency.

The Differential Tension in Aortic Insufficiency.—Goyena warns to suspect aortic insufficiency whenever, in the absence of bradycardia, the difference between the systolic and the diastolic pressure is greater than normal. The coexistence of other valvular lesions and weakness of the heart action may modify the findings, but not enough to affect materially the characteristic curve. The highest differences are found in Hodgson's disease.

Cephaloplegia in Children.—A child, aged 2, and, a year later, his sister, aged 23 months, developed cephaloplegia after a few days of fever and diarrhea. The paralysis of the muscles of the neck came on suddenly and lasted for ten days, after which recovery was complete. Ormaechea agrees with Figueira (who has published eleven cases at Rio de Janeiro) and Leite Lage (six cases at Lisbon) that the syndrome is a special and abortive form of epidemic poliomyelitis. The cases have always been observed at periods when poliomyelitis was prevailing. He cites further Escardó's eleven cases of facial paralysis in children which Escardó ascribed to poliomyelitis, although other signs of the disease were lacking in several. In one child the facial paralysis was accompanied with cephaloplegia and paralysis of the legs and left arm. Ormaechea thinks we must accept a cephaloplegic form of mild epidemic poliomyelitis.

Trachoma in Argentina.—This is the official report of the committee of five appointed by the government to make a survey of the incidence of trachoma. They found it scattered throughout the entire country but with only a few dangerous foci. The disease is always imported, and stricter control of immigration, education of the public, and treatment to stamp out the foci are advocated.

Trauma of the Brain.—Olmos gives an illustrated description of two cases to show the fine results obtainable, even with extensive meningo-encephalitis, when treated promptly with vaccines, serotherapy, and a silver salt.

Archiv für klinische Chirurgie, Berlin

130: 1-426 (Aug. 7) 1924

Elasticity in Knee Joint. Katzenstein and Fecher.—p. 1.
Dislocation of Wrist. H. Landau.—p. 31.
Rust's Pseudo-Erysipelas. Esau.—p. 36.
Classification of Cancerous Goiters. H. Hueck.—p. 45.
Fracture-Hyperemia in Callus Production. B. Martin.—p. 62.
*Operative Treatment of Angina Pectoris. H. Flörcken.—p. 68.
*Coagulation of Blood Under Irradiation. F. Bernhard.—p. 93.
Lymphogranulomatosis of Stomach. H. Steindl.—p. 110.
*Resection of Vas Deferens. H. Steindl.—p. 117.
Adamantinoma Recurs After Forty-Five Years. Porzelt.—p. 142.
Blood Changes with Recent Fracture. Hartmann.—p. 151.
Appendicitis as Part of Extensive Syndrome. Mueller.—p. 157.
Parallel Clinical and Histologic Findings in Goiter. Hueck.—p. 178.
The Thyroid in a Goiter-Free Region. Büchner.—p. 199.
Classification of Goiters. H. Bürkle-de la Camp.—p. 207.
*Local Spasm of Segment of Vessel. G. Magnus.—p. 237.
Sarcoma of Intestines. Mirotworzew and Sacharow.—p. 256.
*Operative Treatment of Hip Joint Tuberculosis. Antelawa.—p. 275.
Chemical Processes in Healing of Fractures. E. Herrmann.—p. 284.
Epinephrin in Blood with Spontaneous Gangrene. Ornatsky.—p. 293.
Resection of Stomach and Chemistry Thereafter. Smidt.—p. 307.
Tardy Injury of Nerve After Thyroidectomy. T. Antoine.—p. 323.
Perirenal Cysts of Hemorrhagic Origin. Hildebrand.—p. 337.
Relics of Vitelline Duct in Tumor in Appendix Region. Usadel.—p. 348.
Blood Pressure in Intraspinal Anesthesia. Schilf and Ziegner.—p. 352.
Mechanics of Vessels and Healing of Wounds. Rieder.—p. 360.
Prevalence of Capillary Cholangeitis. G. Aiello.—p. 415.
Aneurysm of Abnormal Axillary Artery. Gesselevitsch.—p. 422.

Operative Treatment of Angina Pectoris and Asthma.—Flörcken's table shows that about 75 per cent. were clinically cured of the twenty-seven patients with angina pectoris treated by resection of the sympathetic in the neck on one or both sides. The list includes five cases published by Coffey and Brown and three of Flörcken's own cases. By temporarily severing the sternocleidomastoid muscle (De Quervain), ample access is obtained. He thinks it is important to remove the thoracic ganglion. The mortality to date has been about 20 per cent. In addition he gives the details of four cases of asthma treated in the same way with no return of the asthma to date, the longest interval five months, except one attack during intercurrent influenza in one case, and one attack the seventh week in another.

Coagulation of the Blood Under Influence of Roentgen-Ray Exposures of Spleen.—Bernhard asserts that the spleen cannot be the central organ for coagulation of blood, as some affirm, because she obtained the same results from roentgen exposures of the spleen region in ten splenectomized subjects as in others irradiated. About a third of all the irradiated responded with acceleration of the clotting time and about a third with retarding of the clotting time, while the others showed no change either way. This response seemed to be individually characteristic, returning the same each time.

Resection of Vas Deferens.—This communication from Hochenegg's service confirms that the Steinach operation has an unmistakable effect in a general stimulating and tonic action on the entire organism. But this effect is transient, and the complications which are liable to follow, such as rapid loss of strength and an unfavorable influence on the central nervous system, impose extreme caution in its application. Steindl performed the operation in several cases of inoperable cancer, hoping thus to rouse the defensive forces. The results were so good that he since has applied it to

supplement the extirpation of cancers in the rectum, to help the organism in its task of recuperation, but was unable to detect any special influence from it. No benefit was apparent in a case of Parkinson's disease and one of parkinsonian symptoms after encephalitis, nor in prostatic retention of urine. A permanent action was not obtained in any instance.

Spasm of Segment of Vessel.—Magnus describes a micromanipulator with which he has been able to take serial photographs of frog arteries and veins and also of capillaries in human subjects, all confirming the assumption that the vessels react to injury by contraction of the segment involved. Thrombosis was never observed; the vessel arrests hemorrhage by contracting.

Tuberculous Hip Joint Disease.—Antelawa relates that 43.5 per cent. of 179 patients with tuberculous processes in the hip joint were given operative treatment, and 76 per cent. of the twenty-five recently reexamined were entirely cured, the interval since ranging from four to twenty-five years.

Deutsche medizinische Wochenschrift, Berlin

50: 1071-1104 (Aug. 8) 1924

*Histology of Hegar's Sign. S. Sellheim.—p. 1071.
Experimental Prevention of Syphilis. W. Kolle.—p. 1074.
*Silver Nitrate Reaction. F. Krömeke.—p. 1077.
*Platelets and Endocrine Glands. N. Henning.—p. 1078.
Sedimentation of Irradiated Corpuscles. C. Jaller.—p. 1080.
Atrophy of the Liver. A. Mühling.—p. 1081.
Traumatic Pseudocyst of Omentum. H. Rinne.—p. 1083.
Phylogenesis of Corpus Luteum. J. Hett.—p. 1084.
Germs and Ferments of Small Intestine. L. Bogendörfer.—p. 1085.
Epidemic Encephalitis Simulating Diabetic Coma. C. Moewes.—p. 1085.
Psychopathology of Sleep. N. Costa.—p. 1086.
*Intravenous Injections of Phlorizin. M. R. Bonsmann.—p. 1087.
Survey on Physical Diagnosis. H. Rautmann.—p. 1088.
Nostrums. J. Schwalbe.—p. 1090.
Medicine in Russia. N. Semaschko.—p. 1090.

Histology of Hegar's Sign.—Sellheim found in collaboration with others that the compressibility of the lower segment of the uterus in early pregnancy is due to the freedom with which the growing muscle fibers move. He also believes in an active motion. Similar changes in the vagina, and even in the abdominal wall, account for the feeling of having nothing between the fingers in bimanual palpation.

Silver Nitrate Reaction.—Krömeke considers the Lange and Heuer silver nitrate test as simple precipitation of globulins. A quartz lamp is preferable to daylight. The test may indicate the intensity of destruction of tissues but cannot replace the Wassermann reaction.

Platelets and Endocrine Glands.—Henning observed a hemorrhagic diathesis with thrombopenia in a woman after childbirth. The condition subsided at the beginning of a second pregnancy, but returned after childbirth, and proved fatal. He confirms the marked decrease of blood platelets in the first days of menstruation. Venous stasis of the forearm induced cutaneous hemorrhages on such days.

Intravenous Injections of Phlorizin.—Bonsmann observed two instances of hematuria after intravenous injection of phlorizin.

Deutsche Zeitschrift für Chirurgie, Leipzig

186: 289-425 (July) 1924

Supracondylar Fracture of Humerus. Lubinus.—p. 289.
Hallux Varus; Etiology and Treatment. Grueter.—p. 351.
Papillomatous Tumors of Upper Urinary Tract. Schaudig.—p. 358.
*Congenital Metatarsus Varus. Mettenleiter.—p. 369.
*Enlargement of Carotid Gland. A. Birman.—p. 384.
Cyst in Crucial Ligament in Knee. P. Caan.—p. 403.
*Putrid Infection of Stomach. E. Bircher.—p. 409.
Fracture of Scaphoid Bone. F. Eid.—p. 422.

Congenital Metatarsus Varus and Adductus.—Mettenleiter comments on the fact that while the girl, aged 18, had metatarsus varus, her brother, a year or two younger, had metatarsus adductus. The anomaly was bilateral in both and did not cause pain. He emphasizes the importance of seeking to correct the deformity from the very first days after birth, manipulating the foot to straighten it, with even pressure, and training the mother to continue the correcting exercises. There is no hope of the child's outgrowing the deformity. If not seen until the child is older, correction has to be done under general anesthesia, and the correction maintained with plaster for six weeks. The after-treatment is important, the same as with clubfoot.

Tumor of Intercarotid Gland.—Birman tabulates the details of a series bringing to ninety-five the cases of tumors of the carotid gland on record. No benefit has been realized with radiotherapy. Only 18 per cent. were cured in the operative cases, and the operative mortality was 29 per cent. Even in the malignant cases, metastasis at a distance has never been observed, but hemiplegia followed the operation in 25 per cent. of the cases in which the carotid had been resected, and 10 per cent. died from aspiration pneumonia. In the personal case described, the hemiplegia gradually subsided in the man, aged 54.

Putrid Infection of the Stomach and Upper Small Intestine.—Two of Bircher's four cases were acute and two chronic cases. They teach anew the importance of a prompt laparotomy in every case that suggests irritation of the peritoneum. In another case a phlegmonous ulcerative enteritis developed four years after an apparently successful gastro-enterostomy. The onset was insidious until suddenly a stormy phase developed with blood in vomit and stools, and the young woman succumbed to peritonitis five days after resection of the phlegmonous bowel. Necropsy revealed a second segment involved, a long stretch of normal intestine intervening.

Klinische Wochenschrift, Berlin

3: 1473-1520 (Aug. 12) 1924

Arteriosclerosis. J. G. Mönckeberg.—p. 1473. Cont'd.
*Insulin in Mild Diabetes. W. Redisch.—p. 1478.
*Distribution of Circulating Blood Cells. K. Ziegler.—p. 1481.
*Fluctuations in Leukocyte Count. A. Liebenstein.—p. 1482.
*The Bone Marrow in Pernicious Anemia. I. Zadek.—p. 1483.
*Functional Aphasia. E. Fassl.—p. 1487.
*Respiration of Surviving Tissues. K. Posener.—p. 1490.
Leukopenia After Intracutaneous Injections. Vollmer and Schmitz.—p. 1490.
*Psyche and Serum Calcium. F. Glaser.—p. 1492.
*Virulence of Streptococci. S. Joseph and G. Sachs.—p. 1493.
*Hereditary Blood Structures. F. Bernstein.—p. 1495.
*Antagonism of Insulin and Epinephrin. Csépai and Weiss.—p. 1497.
Action of Lactic and Acetic Acid in Intestine. W. Catel.—p. 1497.
*Blackwater Fever in Therapeutic Malaria. Schilling and Jossmann.—p. 1498.
*Juxta-Articular Nodules. M. Jessner.—p. 1499.
The Thyroid and Thermoregulation. Schenk.—p. 1502. Begun, p. 1454.
Instruments for Neurologic Examinations. Trömner.—p. 1517.
Incompatible Mixtures. H. Wieland.—p. 1518.
League of Nations and Serodiagnosis of Syphilis. Sachs.—p. 1518.

Insulin in Mild Diabetes.—Redisch recommends insulin treatment in light cases; they are the best subjects for substitution treatment. The "hypoglycemic intoxication" occurs also with normal blood sugar, and is connected with changes of water metabolism, as he found with Raab.

Distribution of Circulating Blood Cells.—Ziegler does not believe in changes of the erythrocyte or leukocyte counts from merely a different distribution of the cells in various parts of the body. Fluctuations are constantly occurring.

Fluctuations in Leukocyte Counts.—Liebenstein counted the leukocytes in various positions of the body and also during rest. There were differences up to 2,900 cells in the same individual. He found in eleven healthy subjects from 3,300 to 10,000 leukocytes per cubic millimeter.

The Bone Marrow in Pernicious Anemia.—Zadek emphasizes the significance of increased urobilin in the feces as a sign of hemolysis. He found in the same patient red bone marrow during exacerbations and yellow marrow in the remissions. He claims that the blood may become absolutely normal in these phases. Even the size of the erythrocytes was normal for a while.

Functional Aphasia.—Fassl examined two sisters, aged 17 and 15, with defective hearing. Their parents are deaf-mutes, and consequently the children's speech was neglected at the time when they most needed training. To make matters worse, they were committed to an institution for deaf-mutes where they acquired the speech and habits of the deaf and dumb. The older sister improved after treatment. The younger sister did not care. He demands compulsory expert examination of children before sending them to such an institution and during their stay.

Respiration of Surviving Tissues.—Posener examined the respiration and production of lactic acid by surviving papillomas, fibro-adenomas and adenoids. He found almost one molecule of lactic acid per molecule of oxygen intake. This indicates an intermediate position between cancer and normal tissues.

Mental Influencing of Calcium Content of the Blood Serum.—Glaser was able to lower the calcium concentration of the serum in hypnosis by calming the patient (difference 2.16 mg. per hundred cubic centimeters). Excitation increased the serum calcium.

Virulence of Streptococci.—Joseph and Sachs used Ruge's and Philipp's methods for determination of the virulence of streptococci. The results were correct in 75 per cent. of their forty patients with various septic processes. A second test did not always agree with the first.

Heredity of Blood Groups.—Bernstein replaces the hypothesis of two independent pairs of gens by the hypothesis of three multiple allelomorphs.

Antagonism of Insulin and Epinephrin.—Csépai and Weiss found a weaker reaction to epinephrin after injection of insulin. If they gave the patient carbohydrates, the reaction was less only when the glycemia was lowered.

Blackwater Fever in Therapeutic Malaria.—Schilling and Jossmann observed a case of blackwater fever in a patient with general paralysis who had been inoculated in Berlin with tertian malaria.

Juxta-Articular Nodules.—Jessner surveys the literature on the peculiar fibrous nodules situated usually symmetrically at the exterior side of large joints. Most of the cases have been described in the tropics, only a few in Europe. De Quervain's opinion as to the syphilitic origin seems to be correct.

Medizinische Klinik, Berlin

20: 1097-1128 (Aug. 10) 1924

*Chemotherapy with Bismuth. W. Kolle.—p. 1097.
*Bone Fractures and Pseudarthroses. M. Zondek.—p. 1104.
*Improved Breast Feeding. A. Singer.—p. 1106.
Smallpox, Chickenpox and Syphilis. Esau.—p. 1109.
Pathogenesis of Diabetes Insipidus. G. v. Gerlóczy.—p. 1110.
Treatment of Arsphenamin Dermatitis. H. Sieben.—p. 1111.
Knotting Threads with Instruments. F. Weigl.—p. 1113.
Milk Mixtures for Infants. W. Schmitt.—p. 1118.

Chemotherapy with Bismuth.—Kolle reports on his chemotherapeutic studies with bismuth compounds. They have no effect on experimental trypanosomiasis and little on recurrens. Intravenous injections show no therapeutic index worth speaking of. Only the intramuscular route is valuable—even with practically insoluble compounds, such as bismuth carbonate. He corrects his former opinion on the inefficacy of mercury in syphilis of rabbits. It was based on the results of intravenous injections. Intramuscular injections of mercury and bismuth have a distinct inhibitory action on the development of spirochetes. He believes that arsphenamin has a direct action.

Bone Fractures and Pseudarthroses.—Zondek discusses the practical consequences of his experiments. The healed fracture is not strong enough to support the weight of the body, and a gradual shortening of the extremity results. Removal of bone splinters is a cause of pseudarthrosis. If they are left in place they stimulate healing and are resorbed later. Lack of fixation of a pseudarthrosis leads to local inflammation and may result in consolidation of the fracture.

Improved Breast Feeding.—Singer points to some disadvantages of breast feeding. Some infants suffer from meteorism and have greenish stools with mucus. Addition of from 10 to 15 gm. of undiluted cow's milk after every feeding, as recommended by Hecht, restores normal conditions. The author thinks that the cow's milk may act as shock treatment. Menstruation of the wetnurse causes frequent disturbances. It is of no use to force the baby to take the breast before and during the menstrual period. If it is done, the baby may suffer from dyspepsia which is in proportion to the menstrual derangement of the nurse. He also believes that a difference between the nurse's and the baby's blood group may have a pathologic significance.

Monatsschrift für Geb. und Gynäkologie, Berlin

67: 1-130 (Aug.) 1924. Dedicated to C. Menge

*Papilloma Cystoma in Labium Majus. G. Arns.—p. 1.
Formaldehyd Treatment of Chronic Endometritis. Bauereisen.—p. 9.
Roentgenotherapy in Female Genital Cancer. R. Bretschneider.—p. 15.
Chorio-Epithelioma in Broad Ligament. E. Engelhorn.—p. 25.
*Operative Treatment of Incontinence of Urine. H. Eymer.—p. 33.
Metabolism of Carbohydrates in Placenta. Felix and Oettingen.—p. 41.
Formaldehyd Treatment of Sterility in Women. Glaevecke.—p. 47.
Trophoblast Cell Theory of Childbirth. L. Handorn.—p. 50.
*Puerperal Thrombosis of Portal Vein. Linzenmeier.—p. 59.
Methods for Early Diagnosis of Pregnancy. M. Neu.—p. 63.
Hemorrhage from Abnormal Regeneration of Endometrium. Paukow.—p. 71.
Statistics of Eclampsia. F. Sachweh.—p. 77.
Operation in Advanced Ectopic Pregnancy. F. Schatz.—p. 83.
Research on Pregnancy Leukocytosis. F. Schultze-Rhonhof.—p. 93.
*Myasthenia Gravis and Ovarian Deficiency. A. Wolff.—p. 99.
Tumors of Adnexa and Early Carcinoma. P. Wolff.—p. 106.

Papillocystoma in Labium Majus.—Arns describes a small tumor which represented a sweat-gland dilated by obstruction of the duct and retention of the secretion. The tumor, which originated in the skin, proliferated and became a papillocystoma. It may be considered as a possible precursor of cancer and its removal is, therefore, indispensable.

Plastic Operation in Urethral Incontinence of Urine.—Eymer admits four causes of incontinence of urine. It may be a local defect, or of traumatic origin, caused frequently by a confinement, and a secondary muscular insufficiency. Or it may be of purely functional (psychic) origin, or it may accompany disease of the brain or spinal cord, or spina bifida. Rarely it is due to local injury of the nerves of the bladder. A plastic operation (pyramidalis fascia) is indicated in traumatic cases, and is almost invariably successful, as well as in local injury of the nerve supply to the bladder. The treatment under other circumstances depends on the main disease.

Thrombosis of Portal Vein in Childbed.—Linzenmeier observed a case of puerperal thrombosis of the portal vein with obstruction of the mesenteric vessels. These cases are usually complicated by hemorrhagic infarction in the intestine, gangrene, exudation of blood into the abdominal cavity, and peritonitis. A progressive anemia is symptomatic, but is sometimes mistaken for a pernicious anemia. In ninety-one cases on record of a localized infarction of the intestine, resection was performed, and eighteen patients recovered.

Myasthenia Gravis and the Genitalia.—Wolff describes a case of myasthenia gravis pseudoparalytica, excessive lassitude, and exhaustion of muscles, simulating paralysis, in a woman, aged 27, not long after her first childbirth. Aggravation of the symptoms occurred in the premenstrual period, and an improvement during the first two days of the menses. The disturbance may be attributed to a deficient endocrine ovarian secretion, and is not combined with any organic changes. Treatment with ovarian extract had surprising results. In cases associated with pregnancy, an induced abortion is contraindicated, as delivery and lactation exert an unfavorable influence. It seems better to tide the patient through the critical period with ovarian treatment.

Münchener medizinische Wochenschrift, Munich

71: 1085-1118 (Aug. 8) 1924

*Problems of Syphilis. L. Hauck.—p. 1085.
Treatment of Syphilis. R. Griesbach and E. Meyerhoff.—p. 1087.
*Surgery of Trifacial Neuralgia. F. Härtel.—p. 1089.
*Trifacial Neuralgia and the Sympathetic. H. Pette.—p. 1092.
Treatment of Perforated Gastric Ulcer. Steinthal.—p. 1093.
Treatment of Erysipeloid. F. Franke.—p. 1094.
*Architectonic Changes in Head of Femur. W. Müller.—p. 1095.
Muscle Transplants in Paralysis of Legs. E. Schepelmann.—p. 1096.
Toxicity of Stannous Hydride. W. Vaubel.—p. 1097.
Significance of Stomach and Stool Examination. F. Crämer.—p. 1098.
Rules and Fees for Bacteriologic Work. Rimpau.—p. 1101.
Vocational Ability Tests. Fürst.—p. 1101. Conc'n.

Problems of Syphilis.—Hauck believes that all the drugs used in syphilis act only indirectly on the spirochetes. A dialyzed mixture of bismuth salt with an emulsion of organs kills spirochetes, while the bismuth alone in the dialyzed fluid is without action, as Levaditi and Nicolau found. Arsphenamin is by far superior in early cases. No other drug assures abortive treatment. Malaria treatment gave

good results not only in general paralysis but also in early syphilis with persisting changes in the cerebrospinal fluid. Yet it is questionable whether this treatment should be used in the early stages.

Surgery in Trifacial Neuralgia.—Härtel reports 100 cases of trigeminal neuralgia treated with his technic of alcohol injections. He injects the whole gasserian ganglion in grave cases. Where this was possible, a permanent cure resulted. When the injection was only partial—especially with preservation of the sensibility of the cornea—recurrence was the rule in from six months to four years. Some of the patients were cured by reinjection. He gives some points on prevention of complications, and after-care of the eye. None of his patients died, a record which compares quite favorably with the 11 per cent. of mortality of the best surgeons with gasserectomy.

Trifacial Neuralgia and the Sympathetic.—Pette publishes two cases of trifacial neuralgia following extirpation of the cervical sympathetic ganglions.

Architectonic Changes in Head of Femur.—Müller continued Nussbaum's experiments on the production of necrosis of the head of the femur. Instead of ligating the blood vessels, he dislocated the femur in anesthesia. The youngest animals showed no deep changes. The older ones developed necrosis. The lesions were less grave than in Perthes' disease because the head of the femur in animals is not under a heavy strain as in human beings. One of his patients—22 years of age—developed the disease four years after a dislocation. The provoking cause was amputation of the other leg and subsequent strain on the affected side.

Wiener klinische Wochenschrift, Vienna

37: 793-816 (Aug. 14) 1924

*Third Period of Labor. H. Heidler.—p. 793.
*Paralysis After Hydrophobia Vaccination. F. Schweinburg.—p. 797.
*Extra-Intestinal Amebiasis. Panayotaton.—p. 801.
Statistics on Tuberculosis. Mayrhofer-Grünbühel.—p. 803.
Changes of Proteins in Diseases. W. Berger.—p. 804. Cont'n.
"Phagocytosis by Reticulo-Endothelium." E. Ledofsky.—p. 808.
Surgical Experiences in United States. H. Finsterer.—p. 808.
Sterility in Women. J. Novak. Supplement.—p. 1-12.

Third Stage of Labor.—If the placenta does not descend within half an hour, Heidler injects 300 c.c. of sterile physiologic sodium chlorid solution into the umbilical vein and, if necessary, repeats the injection twice at half hour intervals. If this is not successful, injections of pituitary extracts or ergot may be tried and, as a last resort, the placenta manually removed. This operation is not as dangerous as commonly assumed if done early, with all aseptic precautions, in a noninfected woman. If the operation is performed during fever in an infected woman, or if the uterus is examined within a few days after the delivery, death is almost the rule.

Paralysis After Hydrophobia Vaccination.—Schweinburg injected rabbits daily for fourteen days with emulsions of normal human brain or cord. Some of these animals died with symptoms of myelitis which were practically identical with those observed in man after preventive hydrophobia vaccination. He concludes that the paralysis after the vaccination is due to the lipoids injected. Högyes' method, which requires the least amount of material, causes the smallest percentage of paralysis.

Extra-Intestinal Amebiasis.—Panayotaton describes two cases of pulmonary amebiasis complicated with tuberculosis. The prognosis, in such cases, is serious.

Zeitschrift für Tuberkulose, Leipzig

40: 401-480 (July) 1924

Kirchner's Works on Tuberculosis and Leprosy. Möllers.—p. 401.
*Classification of Pulmonary Tuberculosis. K. Turban.—p. 404.
Symmetry in Tuberculosis of Lungs and Larynx. A. E. Mayer.—p. 412.
Elastic Fibers Under Climatic Therapy. W. Viets.—p. 416.
Wassermann's Reaction in Active Tuberculosis. Kalcher and Sonnenfeld.—p. 420.
Artificial Pneumothorax in Tuberculosis. Kogan.—p. 431.
*Syphilis in Sanatorium for the Tuberculous. F. Koester and S. Amend.—p. 437.
Biologic Diagnosis in Tuberculosis. Tegtmeier.—p. 442.
Alizarin Test for Tuberculous Sputum. Zühlsdorff.—p. 449.

Classification of Chronic Tuberculosis.—Turban suggests a classification of chronic pulmonary tuberculosis based on his older classification but comprising the pathologic anatomy, the clinical and roentgen-ray findings, the immunity reaction, the stage, the form and the degree.

Syphilis in Sanatoriums for the Tuberculous.—Kalcher and Sonnenfeld found syphilis in 3 per cent. of the 638 tuberculous inmates of the Ambrock Sanatorium during 1923.

Zeitschrift für urologische Chirurgie, Berlin

16: 1-86 (Aug. 11) 1924

*Treatment of Recurring Papillomas. A. Malavasos.—p. 1.
Urogenital Fistulas in Women. T. Tavildarow.—p. 11.
*Muscle Tampon in Resection of Kidney. A. Ciminata.—p. 37.
Large Myoma in Prostate. A. Damski.—p. 47.
*Complications with Nephrectomy. R. Fronstein.—p. 51.
Cystic Kidneys and Cystic Liver. E. Kratzeisen.—p. 70.

Recurring Papillomas.—Malavasos says that it is the routine practice in the urologic clinic at Vienna, with which he is connected, to insist on the patient's being reexamined every one to three months after electrocoagulation to remove papillomas in the bladder, as well as in the nonoperative cases. The laparotomy scar is palpated, in addition to cystoscopy and palpation of the bladder. Four typical cases are described; in two the electrocoagulation was applied twenty-six and seventeen times. A recurrence in the abdominal scar strongly suggests a malignant nature.

Muscle Flap as Tampon After Resection of Kidney.—Ciminata extols the advantages of covering that portion of the kidney with an oblong flap of muscle tissue after resection of part of the kidney. Healing was exceptionally rapid in dogs thus treated, but the muscle flap was rapidly resorbed, its place being taken by connective tissue. Conditions here are unusually poor for regeneration of the muscle fibers.

Complications of Nephrectomy.—In discussing the numerous complications liable, Fronstein ascribes the hematuria after nephrectomy to physiologic causes, compensating hyperemia of the remaining kidney.

Zentralblatt für Gynäkologie, Leipzig

48: 1729-1792 (Aug. 9) 1924

Pregnancy Pyelitis. E. Klaften.—p. 1730.
*Hexamethylenamin in Postoperative Ischuria. E. Weinzierl.—p. 1741.
Idem. A. Ecke.—p. 1746. Idem. E. Schwab.—p. 1749.
*Agenesis of Kidney. W. Duwe.—p. 1754.

Hexamethylenamin in Postoperative Ischuria.—Weinzierl used with good results intravenous injections of 40 per cent. hexamethylenamin in postoperative retention of urine in 327 gynecologic and twenty-eight obstetric cases. He injected 5 c.c. the second day after the operation. The dose was repeated once or twice. Ecke administered the injection at 9 o'clock in the evening, if the patient was operated in the forenoon. The results in fifty-one cases have been encouraging. Schwab admits the value of the treatment, but warns to interrupt it at once on signs of irritation of the bladder. In his experience it failed only in 2.9 per cent. of 420 cases.

Congenital Defect of Left Kidney and Genital Malformation.—Duwe describes a case of an absent left kidney associated with a rudimentary uterus, and vestiges of the left ovary. The right organs were regularly functioning. The vagina was missing; external genitalia, urethra and bladder normal. The malformation, he says, may be explained by an incomplete development of the left urogenital fold and of Müller's duct.

Casopis lekaruv ceskych, Prague

63: 1225-1252 (Aug. 16) 1924

*Bone Changes in Ozena. J. Cisler.—p. 1225.
*Curability of Tuberculous Cavities. J. Jedlicka.—p. 1229.
*Histology of Corti's Organ. N. Solovcov.—p. 1234.
Flocculation Reactions. J. Hachla.—p. 1238. Cont'd.
Treatment of Cancer of Pharynx. E. Soukup.—p. 1243.

Bone Changes in Ozena.—Cisler studied the changes of bones in seventy-six patients with ozena. He finds that they may be explained as sequelae of the atrophic process in the nose. There is no reason to assume that the changes are primary and predispose to the ozena. Their extent depends on the age in which ozena began, the changes being greater if the skull was still developing.

Curability of Tuberculous Cavities.—Jedlicka considers conservative methods as rarely sufficient in pulmonary tuberculous cavities. Pneumothorax and extrapleural thoracoplasty have changed the lethal prognosis to a large extent. Twelve roentgenograms illustrate the improvement observed in some of his patients.

Histology of Corti's Organ.—Solovcov gives technical hints for histologic examination of Corti's organ. The organ is separated from the spinal ganglion by another neuron. This accounts for the normal development of the organ in anencephalia.

Nederlandsch Maandschrift v. Geneeskunde, Leiden

12: 421-492, 1924

*Results of Operative Treatment of Goiter. P. M. de Planque.—p. 421.
*Accessory Thyroid in Tongue. M. N. Roegholt.—p. 486.

Results of Operations for Goiter at Leiden.—De Planque's tabulation of the details of 46 cases (1912-1923) fills thirty pages. Only half the thyroid was removed, and only 7 of the 17 with exophthalmic goiter were cured and 19 of the 29 with goiter but no signs of hyperthyroidism. Two died in each of these groups. He has now adopted subtotal thyroidectomy for the routine procedure. In grave cases of exophthalmic goiter the operation is done at more than one sitting.

Lingual Goiter.—Roegholt extirpated the tumor in the tongue, which he had assumed to be a lymphoma. It proved to be a colloidal thyroid adenoma from aberrant thyroid tissue in the base of the tongue, adherent to the hyoid bone. The young woman was physically and mentally backward, and had never menstruated until after the operation.

Nederlandsch Tijdschrift v. Geneeskunde, Amsterdam

2: 739-854 (Aug. 9) 1924

Cultivation of Blastocystis Hominis. G. W. Bosch.—p. 740.
*Winter Infection with Malaria. N. H. Swellengrebel.—p. 750.
*Tuberculous Spondylitis. G. J. Huët.—p. 764.
*Hemolysins of Cholera Vibrios. J. J. van Loghem.—p. 773.
Ileus from Meckel's Diverticulum. K. A. Rombach.—p. 776.
*Progress in Scarlet Fever. H. Aldershoff.—p. 780.
Lead in Drinking Water. H. Peeters.—p. 809.

Fall and Winter Malaria Infection at Amsterdam.—Malaria has been rather prevalent at Amsterdam in recent years, and Swellengrebel presents evidence that the parasite of tertian malaria can develop in *Anopheles maculipennis* living in Amsterdam houses in fall and winter, notwithstanding the freezing temperature outdoors. The number of mosquitoes found infected was large, even in comparison with tropical conditions, but the disease in man did not spread to correspond. In some parts of the city, thirty-six of these mosquitoes were found on an average in 140 houses between September and December, and thirty-nine in ninety-five houses January to April. It is evident that in malaria the external temperature is a negligible factor so far as indoor mosquitoes are concerned.

Treatment of Tuberculous Spondylitis.—Huet seeks to explain the wide difference in the outcome in different cases. By heeding the roentgenograms—taken from the side—we may be able to determine which cases are promising. He agrees with Calvé that the first two phases, the infiltration and the ulcerative destruction, take usually three years and sometimes five before there is any attempt at healing. Cicatrization is fibrous at first, and there is never consolidation of bone unless the bones are in direct contact. The outlook for complete recovery is more favorable the longer the disease has lasted, and the more pains-taking the after-care. In children, the operation is merely one incident in the treatment.

Hemolysins in Cholera Vibrios.—Van Loghem discriminates between digestion of the elements of the blood and hemolysis, by which he means the passage of the hemoglobin out of the erythrocytes. The cholera vibrio is not hemolytic at first, while the Tor vibrio is potent in this respect, but in time the cholera vibrio forms hemolysins. They seem to be endolysins, while the Tor vibrio and Dunbar's vibrio form exohemolysins.

Progress in Scarlet Fever.—Aldershoff surveys the recent achievements in our knowledge of scarlet fever. He is director of the National Serum Institute at Utrecht, and he is now engaged in studying the strain of hemolytic streptococcus of scarlet fever sent to him from America. He accepts the Schultz-Charlton blanching phenomenon as a reliable sign of scarlet fever during the first four days, and he regards the outlook as promising for preventive inoculation with a scarlet fever toxin-antitoxin, as in diphtheria. [He does not mention Caronia's work.]

Hygiea, Stockholm

86: 417-448 (July 15) 1924

Neurasthenic Fatigue. P. Bjerre.—p. 417. Conc'n, p. 462.
Present Status of Epidemic Encephalitis. E. Bergman.—p. 426.

86: 449-480 (July 31) 1924

*The Leukocyte Count in Arthritis. G. Kahlmeter.—p. 449.
"Delusions and the Conventional." S. Hedenberg.—p. 473.

Leukocyte Count in Acute and Chronic Arthritis.—Kahlmeter's research on 169 arthritis cases has confirmed for the leukocytes what he found in regard to the erythrocytes in 132 cases, namely that in secondary chronic polyarthritis in afebrile periods, arthritis deformans, and primarily chronic polyarthritis without fever, the blood findings are within normal range, while the erythrocytes were below 4,000,000 in 50 per cent. of the febrile arthritis cases, gonorrheal arthritis and primarily chronic progressive arthritis with fever, and leukocytosis was pronounced. The evidence thus testifies to the different nature of primarily chronic arthritis in the cases with and without fever.

Norsk Magazin for Lægevidenskaben, Christiania

85: 505-632 (July) 1924

*Puerperal Thrombosis. G. Schaanning.—p. 505.
*Reactivation After Arsphenamin Injection. R. Krefting.—p. 535.
Improved Trephine for Sclerectomy. S. Holth.—p. 538.
*Gastric and Duodenal Ulcer. H. Krohn.—p. 540.
A Year of Roentgenotherapy. H. Nitter.—p. 548.

Puerperal Thrombosis.—Thrombosis developed in 0.61 per cent. of the 9,367 childbirths in the last six years at the Christiania maternity. It appeared the fifteenth or sixteenth day after delivery in all but two in which the intervals were three and fifty-one days. Embolism developed in thirteen cases, none fatal. The women who had lost more than 1,000 c.c. of blood presented thrombosis in 2.92 per cent. and puerperal fever in 10 per cent., while the corresponding figures for women who had not lost so much blood were 0.44 and 4.1 per cent. It is now the routine practice to arrest excessive hemorrhage at all costs as the lesser evil, not waiting until the patient is too weak. When the loss of blood reaches 1,000 c.c., Brandt clears out the uterus with his hand after delivery of the placenta. This always arrested the hemorrhage, and none died from infection afterward. As soon as thrombosis is suspected, the foot of the bed is raised with blocks 15 cm. high, but no bolster is placed under the knees. Superficial massage is begun after the temperature has been normal for a week, and the joints are exercised both passively and actively. Embolism never developed from this. Two of the fifty-seven thrombosis patients died from pyemia about forty days after spontaneous delivery, and one from pneumonia after forceps. The others recovered. There were only two instances of thrombosis among the 119 placenta praevia cases.

Provocative Arsenical Injection with Negative Wassermann Reaction.—Krefting reiterates that it is a mistake to accept as reliable reactivation any change in the Wassermann reaction after provocative injection of arsphenamin.

Gastric and Duodenal Ulcer.—Krohn remarks that the duration of the ulcer did not seem to influence the outcome in his 266 ulcer patients treated medically in the last ten years. Three developed cancer in the ulcer but the course was so short in two in this group that the ulcer was probably malignant from the start. In the 172 supervised for more than two years, the outcome was excellent in 75 per cent. of the patients aged less than 40, but only in 48 per cent. above that age. In the total fifteen cases of fatal hemorrhage from the ulcer all but three were over 40. Only one died from perforation of the ulcer; this occurred three years later, nearly five years after the first symptoms. The ulcer perforated later in two cases, with recovery after operative measures.